



The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

PIPELINE ENGINEERING AND SAFETY DIVISION

INCIDENT REPORT

Webster Street, Needham, Massachusetts

April 28, 2006

PIPELINE ENGINEERING AND SAFETY DIVISION

Accident File

Location: Webster Street, Needham, Massachusetts

Date of Accident: April 28, 2006

Gas Company: NSTAR Gas Company

Estimated Property Damage: Approximately \$20,000 *

Injuries: 0

Report Issued - March 2009

* Estimated by NSTAR Gas Company

TABLE OF CONTENTS

I. INTRODUCTION 1
A. Scope of this Investigation 1
B. Overview of Incident 2

II. BACKGROUND 2

III. THE DEPARTMENT'S INVESTIGATION 3
A. Initial Actions and Observations 3
B. NSTAR Gas Company 3
C. The Needham Fire Department 4
D. Interview with the Employee Who Performed the Tapping Procedure 4
E. NSTAR's Operating & Maintenance Procedures 5
F. Other Tests and Observations 5

IV. LEAKAGE SURVEYS 6

V. TRAINING AND OPERATOR QUALIFICATION 7

VI. FAILURE ANALYSIS OF THE HIGH VOLUME TAPPING TEE 7

VII. ODORIZATION 9

VIII. FINDINGS AND CONCLUSIONS 9
A. Findings 9
B. Conclusions 10

IX. NSTAR ACTIONS
. 10

EXHIBIT LIST

I. INTRODUCTION

A. Scope of this Investigation

The Massachusetts Department of Public Utilities (the "Department"), pursuant to G.L. c. 164, §105A and G.L. c. 82, §40 ("Dig Safe"), has investigated a release of natural gas ("gas") that resulted in an ignition and fire at the intersection of Webster Street and Harris Avenue, Needham, MA, which occurred on April 28, 2006, (the "Incident").¹ There was one injury requiring in-patient hospitalization as a result of the Incident. The Incident resulted in approximately \$21,000 of damage as estimated by NSTAR Gas Company ("NSTAR" or "Operator") (Exh. 1). The operator of the pipeline was NSTAR.

As part of the Department's annual certification process by the United States Department of Transportation ("DOT"), the Department must report to the DOT

[e]ach accident or incident . . . involving a fatality, personal injury requiring hospitalization, or property damage or loss more than an amount the Secretary establishes, any other accident the [Department] considers significant, and a summary of the investigation by the authority of the cause and circumstances surrounding the accident or incident.

49 U.S.C. § 60105(c)

The purpose of this report is to inform the DOT of the cause and circumstances surrounding the Incident.

The Department has established procedures for determining the nature and extent of violations of codes and regulations pertaining to the safety of pipeline facilities and the transportation of gas, including but not limited to, 220 C.M.R. §§ 101.00 through 113.00. See 220 C.M.R. §§ 69.00 et seq. The Department also enforces the DOT safety standards for gas pipeline systems as set forth in 49 C.F.R. § 192 et seq.

¹ Incident means any of the following events:
(1) An event that involves a release of gas from a pipeline or of liquefied natural gas or gas from an LNG facility and
(i) A death, or personal injury necessitating in-patient hospitalization; or
(ii) Estimated property damage, including cost of gas lost, of the operator or others, of \$50,000 or more.
(2) An event that results in an emergency shutdown of an LNG facility.
(3) An event that is significant, in the judgement of the operator, even though it did not meet the criteria of paragraphs (1) or (2). 49 CFR § 191.3.

B. Overview of Incident

On April 28, 2008, at 2:15 P.M., NSTAR notified the Department of an ignition of gas at Webster Street and Harris Avenue, Needham that resulted in a serious injury to one person (Exh. 2). The Needham Fire Department ("Fire Department") stated that on April 28, 2006, at 1348 hours (1:48 p.m.) it received notification of a release of gas and ignition at Webster Street and Harris Avenue (Exh. 3). The Fire Department's Report stated that a gas main being serviced in a road provided the fuel for the fire. And one person sustained injuries (id.).

NSTAR's report of this Incident to the Pipeline Hazardous Materials Safety Administration ("PHMSA") states:

The injured employee was tapping the 2 inch high volume tapping tee installed on an existing 2 inch intermediate pressure plastic main. The electrofusion tapping tee was one of four taps planned on a double bypass to facilitate a main cutout in conjunction with a leak repair. An employee in close proximity in the same trench who was preparing a second tap reported hearing a "blowing sound". As he turned toward the location of the tap in progress he observed the gas ignition and immediately assisted the injured employee exit the trench. The gas continued to escape through the top of the tapping tee and burn until main isolation valves were closed and the fire allowed to extinguish.

(Exh 1).

The report indicated that there was one injury requiring in-patient hospitalization (id.). This report also indicated that property damage totaled \$21,000 (id.).

The Department's investigation finds that the resulting fire at Webster Street and Harris Avenue was caused by the ignition of escaping gas through the top of a two-inch plastic high volume tapping tee on a main in an excavation where a NSTAR crew was working to repair a gas leak. An employee had completed tapping the high volume tapping tee, and as he was withdrawing the cutting tool from the high volume tapping tee, the cutting tool and the cap blew off the tee. Ignition of the gas occurred shortly thereafter. The Department was not able to determine the ignition source.

II. BACKGROUND

The Incident occurred at a NSTAR gas distribution crew work site at the intersection of Webster Street and Harris Avenue, Needham, MA on April 28, 2006. The crew was working to repair a gas leak at this location. This area consists primarily of single-family residential dwellings. The gas facilities supplying these buildings are located in the roadways.

There are four segments of main in Webster Street and Harris Avenue in the vicinity of the Incident (Exh. 4). They operate at high pressure.² These segments are:

- 1307 feet of three-inch bare steel main installed in 1926 (Webster Street)
- 196 feet of two-inch bare steel main installed in 1957 (Harris Avenue)
- 268 feet of two-inch plastic main installed in 1986 (Harris Avenue)
- 84 feet of two-inch plastic main installed in 1987 (Harris Avenue)

The operating pressure of these mains at the time of the Incident was approximately 57 pounds per square inch gauge ("psig.") (id.). The maximum allowable operating pressure³ ("MAOP") of the mains is 60 psig (id.).

III. THE DEPARTMENT'S INVESTIGATION

A. Initial Actions and Observations

On April 28, 2006, at approximately 3:30 p.m., an inspector from the Department's Pipeline Engineering and Safety Division ("Division") arrived at the site to investigate the Incident. He met with representatives from the Fire Department and NSTAR. During the course of the investigation, the inspector learned that a NSTAR crew was working to repair a Grade 2 leak on a three-inch bare steel high pressure main at this location (Exh 5). This work required a four-way main cutout procedure and the installation of bypasses to maintain service to customers (id.). This work was completed in the morning, and a pressure test of the new facilities was conducted at 100 psig (id.). Soon after the pressure test was concluded, an employee tapped a two-inch plastic High Volume Tapping Tee ("HVTT") (id.). As he withdrew the cutter into the body of the HVTT, the cap of the HVTT and the tool and cutter blew off the top of the HVTT (id.). This permitted high pressure gas to be released to the atmosphere and ignite, seriously injuring the employee (id.). The inspector observed the work area, and he photographed the scene as well as the facilities in the excavation, the damaged pipe that had been removed from the excavation and the HVTT and the cutting tool.

B. NSTAR Gas Company

A NSTAR crew had been working at this location for several days preparing to repair a grade 2 leak in the intersection that had been discovered by a leak survey on April 14, 2006

² A high pressure system is a system in which the gas pressure in the main is higher than the pressure provided to the customer.

³ The maximum pressure at which a pipeline may be operated as set forth in 49 C.F.R. § 192.619.

(id.). Once the leak area had been excavated it became apparent that a four-way main cut-out procedure was required to eliminate the leak (id.). In addition, bypasses were required to maintain continuous gas services to NSTAR's customers in the affected area (Exh. 6).

The Area Supervisor had conducted a job briefing in the morning with the local supervisor and the crew members to review the tie-in piece, the air test and the sequence for tapping the four tees included in the tie-ins (Exh 5). He also reviewed the locations of existing valves in the system located on Webster Avenue in the event it became necessary to shut down the system (id.). This work was completed by 12:30 P.M., and the pressure test was applied to the tie-in section (id.). The crew then went to lunch (id.). The successful pressure test was removed at 1:45 P.M., and the employee began to make the first of four taps (id.). The first tap involved a two-inch HVTT (id.).

Another employee who was working in the excavation a short distance away heard what appeared to be a blowing sound from the two-inch tap the employee was working on (id.). The second employee turned to look, and he observed the gas ignite within a few seconds (id.). The second employee assisted the employee who was making the tap to get out of the excavation (id.). The Area Supervisor was notified of this Incident, and he arrived back at the site at 2:11 P.M. He instructed crew members to shut the valves in Webster Street, at the intersection of Great Plain Avenue and at Dedham Avenue (id.). The fire was extinguished at 2:32 P.M. (id.). The existing segments of mains and the replacement tie-in section were removed from the excavation in order for the system to be reconnected and returned to service (Exh. 7). The HVTT (Exhs. 8 a, 8b) and the Tapping Tool with the cap and cutter (Exhs. 9 a, 9b) were also recovered.

C. The Needham Fire Department

The Fire Department received an alarm of an outside gas ignition at Webster Street and Harris Avenue at 1:48 P.M (Exh. 3). The first unit arrived on scene at 1:52 P.M (id.). A number of additional units were dispatched to the site for support (id.). The last unit departed the site at 9:39 P.M. (id.). Fire department personnel stood by while NSTAR personnel shut two main valves to stop the flow of gas (id.). This caused the fire to become extinguished. Approximately 30 buildings, involving 125 persons, were evacuated as a result of the Incident (Exh. 1). The evacuation ended at 6:00 P.M (Exh. 3).

D. Interview with the Employee Who Performed the Tapping Procedure

On August 17, 2006, two Division inspectors interviewed the NSTAR Gas employee who tapped the HVTT (Exh. 10). He stated that he has been involved with dozens of similar tapping procedures in the past, and that he is current in his Operator Qualification ("OQ") certification (id.). The employee stated he tapped the main through the HVTT (id.). He then began the reverse procedure to remove the tool from the HVTT (id.). At some point, he heard

gas escaping from the tee (id.). The employee stated that he became aware that the cap was loose and spinning with the tool as he rotated the handle (id.). He stated that he picked up the cap from the tee to see what was there (id.). At this time, he stated he began to reset the cap to try to stop the flow of escaping gas (id.). But as he was applying pressure to the handle, he stated that the gas pressure forced the equipment out of the tee, permitting gas to escape from the open end of the HVTT (id.). He stated that he attempted to stop the flow of gas by placing his foot on the tee until a coworker could shut off a nearby valve in the excavation (id.). He was unable to do this, and a very short time later ignition of the gas occurred (id.).

E. NSTAR's Operating & Maintenance Procedures

NSTAR incorporated Central Plastics' Operation Instructions for the use of the No Blow-By Punch Tool into its Operating and Maintenance Procedures (Exh. 11) Item 3 of Central Plastics Operations Instructions states that "the cap can be installed and tightened just enough to get a good seal on the o-rings (hand tighten only) (Exh. 12)."

In May 2001, Central Plastics Company issued a revision to its No Blow-By tool Operation Instructions (Exh. 13). These revised instructions added the following items:

- 1) Inspect the sealing surface of the No-Blow By Tapping Tool and ensure the O-Ring seal is properly installed and in good condition
- 5) . . . Retighten the cap after rotating the tapping tool a couple of revolutions.
- 6) . . . (NOTE: If at any time you hear gas escaping - tighten the cap)
- 7) Occasionally there will be a slight deformation of the I.D. o-ring and a small amount of gas leaking around the punch. This is normal and will not prevent the cap from sealing properly

(id.).

F. Other Tests and Observations

The Federal Regulation, 49 C.F.R. Part 199, § 199.11(b), Drug tests required, states in relevant part:

Post-accident testing. As soon as possible but no later than 32 hours after an accident, an operator shall drug test each employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident, and

49 C.F.R. Part 199, § 199.225(a) Alcohol tests required, states in relevant part:

Post-accident. (1) As soon as practicable following an accident, each operator shall test each surviving covered employee for alcohol if that employee's performance of a covered function either contributed to the accident or cannot be completely discounted

as a contributing factor to the accident.

Five NSTAR employees were working on the main at Webster Street on April 28, 2006. Two had left prior to the Incident. None of these employees were subjected to drug and alcohol tests after the Incident.

The employee who performed the tapping procedure was the person who was injured. NSTAR was unable to obtain drug or alcohol tests from him as he was transported to the hospital immediately following the Incident (Exh 14). In addition, he was medicated before drug tests could be performed (*id.*). NSTAR did not drug test the other employees in the crew as they were not involved in the tapping procedure (*id.*)

IV. LEAKAGE SURVEYS

Leakage surveys of gas mains and services are required by federal and state regulations, 49 C.F.R. Part 192, § 192.723⁴ and 220 C.M.R. § 101.07.⁵ An operator generally employs flame ionization detectors⁶ and combustible gas indicators to locate and quantify gas leakage. NSTAR conducted a mobile survey of Webster Street and Harris Avenue on July 14, 2005. No leaks were detected. (Exh.15).

A NSTAR supervisor conducted a leak survey of each main segment as it was returned to gas service. No leaks were detected. On May 4, 2006, a walking survey of the entire area was conducted, and no leaks were detected. (Exh. 16).

⁴ Leakage survey with leak detection equipment must be conducted outside business districts at intervals not exceeding five years. However, for cathodically unprotected distribution lines subject to § 192.465(e) on which electrical surveys for corrosion are impractical, survey interval may not exceed three years.

⁵ Operators shall conduct leakage surveys over all service lines as frequently as experience and technology indicate are necessary, and in accordance with 49 C.F.R. Part 192.

⁶ Flame Ionization Detector - An instrument that uses hydrogen fuel to power a small flame in a detector cell. A pump is used to pass continuous air samples through the cell. If a sample contains hydrocarbons such as gas, it will be burned or ionized in the hydrogen flame. It is accurate in the parts per million range.

V. TRAINING AND OPERATOR QUALIFICATION

NSTAR provided training records of the four employees in the crew that placed the new main into gas service on April 28, 2006 (Exh. 17). The employee who performed the tapping procedure received training on pipe joining on February 20, 2002 (id.). He received training on high volume electrofusion tees on March 21, 2000 (id.).

49 C.F.R. Part 192, Subpart N, requires operators to have a qualification program for its employees who perform covered tasks on its pipeline system. Among other criteria, a covered task is an activity that is performed as an operations or maintenance task. NSTAR provided the operator qualification records for the employee who performed the tapping procedure at Webster Street and Harris Avenue (Exh. 18). The employee received his Operator Qualification for "Tapping Pipelines Under Pressure" (Covered Task No.37) on March 30, 31 and April 1, 2004 (id.). He received his Operator Qualification for "Joining Pipe Materials Other Than Plastic or Steel During Maintenance" (Covered Task No.49) and "Joining Plastic Pipe for Maintenance" (Covered Task No.50) on January 19, 2006 (id.). The employee was also certified in "Abnormal Operating Conditions/Properties of Natural Gas", (Covered Task No.70) on March 31, 2004 (id.).

VI. FAILURE ANALYSIS OF THE HIGH VOLUME TAPPING TEE

Altran Corporation ("Altran") conducted failure analysis of the Webster Street and Harris Avenue two-inch high volume tapping tee. The purpose of the testing was to perform tapping operations on similar fittings in as many ways as reasonable to result in the disengagement of the cutter from the tapping tee as it may have occurred in the Incident. The tests were performed with a used NSTAR tapping tool and a new NSTAR tapping tool. The Department observed all aspects of the failure analysis.

On January 7, 2008, Altran submitted its report⁷ ("Altran Report") to the Department. Altran's findings and conclusions are shown below:

Cutter punching tests performed showed no significant difference in tapping (punching) force between tapping with a loose cap and tapping with a hand tightened cap. It also showed no significant difference in tapping (punching) force between pressurized and non-pressurized samples.
(Altran Report at 12).

Cutter retracting tests were performed to compare correct vs. incorrect positioning of

⁷ Copies of the Altran Report report can be obtained by contacting: Altran Corporation, 451 D Street, Boston, MA 02210

the No Blow-By tapping tool's cap.

- If the tool's cap was tight on the high volume tapping tee, the cutter was not able to disengage from the tee. The cap withstood an average torque force of 155 ft lbs from the cutter when retracted and in contact with the inside of the cap. In this case the cutter remained within the tee, and the high torque applied was rotating the cutter in place damaging (shredding) the internal threads of the tee. When this test was repeated under pressure, there was no leaking of the internal Nitrogen gas.
- If the tool's cap was loose it became disengaged from the high volume tapping tee and subsequently, the cutter was able to completely thread itself out of the tee during retraction. The torque required for this disengagement of the cutter was on average, 49 ft lbs. This torque is actually less than the torque required for the tapping operation (55 ft lbs). When this test was performed under the 56 psi Nitrogen pressure, no gas leaked until the cutter came out to a point where the pressure pushed it from the tee. These findings indicate an operator may not notice a significant change in torque while retracting the cutter beyond its intended position within the fitting

(id.).

It was also noted during the testing that the used corroded No Blow-By tool supplied by NSTAR caused the loosened tool cap to unscrew and become disengaged after 9 ½ full turns of the tool (id. at). The same test performed with the new No blow-By tool did not disengage the tool's cap, and required 39 turns to unscrew the tool's cap only half way (id.).

Based on the findings from the laboratory testing of exemplar fittings, and the examination of the failed fitting from the incident site, it was likely that during the retraction step in the tapping procedure in the field, the No Blow-By punch tool's cap backed out completely or nearly completely (id.). This allowed the cutter to continue to retract beyond the top of the tee, and become disengaged (id.). This is supported by the evidence that the internal and external threads of the tee from the incident and the internal threads of the tool's cap from the incident were found intact indicating a condition where the cap was not in place and the cutter was free to disengage from the tee allowing the release of gas (id.). It was noted in the laboratory testing the top edge of the exemplar tees were deformed due to the cutter disengaging (id.). After the testing this deformation returned nearly to its original position (id.). The tee from the incident was damaged to heat from the fire and this feature was not identifiable (id.).

VII. ODORIZATION

In accordance with 220 C.M.R. § 101.06(20), an operator must odorize the gas in its distribution system of sufficient intensity so that the gas is readily perceptible to the normal or average olfactory senses of a person coming from fresh, uncontaminated air into a closed room containing 0.15 percent gas in air. An operator must also conduct periodic samplings of the gas to assure the proper concentration of odorant throughout its system.

Tests were conducted by two employees after the Incident at the following Needham locations:

<u>Time</u>	<u>Location of Sample</u>	<u>Technicians</u>	
		<u>Waldron</u>	<u>Piper</u>
1625	793 Great Plain Ave.	.080/.090	.060/.090
1658	786 Webster St.	.080/.090	.050/.080
1725	929 Webster St.	.080/.090	.080/.110
1745	938 Webster St.	.080/.090	.070/.090
1815	865 Central St.	.050/.060	.090/.120

The odor detectibility levels of gas in air after the Incident ranged from 0.05 to 0.12 percent gas in air, indicating that the odorant levels were within the prescribed state regulations (Exh. 19).

VIII. FINDINGS AND CONCLUSIONS

A. Findings

1. There are four main segments on Webster Street and Harris Avenue where the Incident occurred. They are:
 - a. 1307 feet of three-inch bare steel pipe installed in 1926;
 - b. 196 feet of two-inch bare steel pipe installed in 1957;
 - c. 268 feet of two-inch plastic pipe installed in 1986;
 - d. 84 feet of two-inch plastic pipe installed in 1987.
2. The MAOP for these mains is 60 psig.
3. On April 28, 2006, a NSTAR crew prepared to repair a Grade 2 gas leak by performing a four-way main cut-out.
4. The NSTAR crew conducted a successful pneumatic test of the new tie-in section from 12:30 P.M. to 1:45 P.M. at 100 psig to verify there were no leaks.
5. After the pressure test had been completed, the employee began to tap the Central Plastics HVTT.

6. As the employee withdrew the cutter into the body of the HVTT, he heard gas escaping from the tee.
7. The employee stated he observed that the cap was loose and spinning with the tool as he rotated the handle.
8. The employee stated he picked up the cap from the tee to see what was there, and he began to reset the cap to stop the flow of escaping gas.
9. The gas pressure forced the equipment out of the tee, permitting gas to escape from the open end of the HVTT.
10. The cap, handle and cutter were all forced out of the HVTT by the gas pressure.
11. The source of the gas leak was through the open end of the HVTT.
12. On April 28, 2006, at 1:48 p.m., the Fire Department received notification of an outside gas ignition at Webster Street and Harris Avenue.
13. There was one injury, requiring in-patient hospitalization, as a result of the Incident.
14. NSTAR had conducted leakage surveys of the area during the year preceding the Incident and found no leaks in its system.
15. The gas odorant levels in NSTAR's distribution system at Webster Street and Harris Avenue met regulatory requirements.
16. NSTAR qualified the employee who performed the tap.
17. NSTAR incorporated Central Plastic's Operation Instructions for use of the No-Blow By Punch Tool into its Operating and Maintenance Procedures. Item 3 of Central Plastics Operations Instructions states that . . . "the cap can be installed and tightened just enough to get a good seal on the o-rings (hand tighten only)."
18. In May 2001, Central Plastics Company issued a revision to its No Blow-By tool Operation Instructions to further ensure that the cap remained tightened

B. Conclusions

The Department has reason to believe that NSTAR failed to apply its own procedures to address the tap of the HVTT on the new main segment at Webster Street and Harris Avenue, and that failure was causally related to the Incident. The employee who was making the tap at Webster Street and Harris Avenue failed to adequately follow NSTAR's procedures. It appears that the cap may not have been tightened on the body of the HVTT during the tapping procedure. The loose cap permitted gas to escape and caused its subsequent ignition.

IX. NSTAR ACTIONS

On March 20, 2008, pursuant to G.L. c. 164, § 105A and C.M.R. §§ 69.00 *et seq.*, the Department concluded an enforcement action with NSTAR. NSTAR Gas Company, D.P.U. 06-PL-07. NSTAR agreed to review the instructions for tapping with a HVTT and revise its Operating and Maintenance Procedures to include the most recent instructions from

the manufacturer. NSTAR also agreed to retrain all personnel who perform tapping operations on live gas pipelines.

EXHIBITS

1. NSTAR Incident Report Form PHMSA F 7100.1
2. DPU Log Book - April 28, 2006
3. Fire Department Incident Report
4. Main Segments
5. NSTAR Description of Incident
6. Sketch of Proposed Main Repair
7. Photograph of the Existing Mains and the Tie-in Section
- 8a. Photograph of the HVTT
- 8b. Photograph of the HVTT- Closeup
- 9a. Photograph of the Tapping Tool
- 9b. Photograph of the Tapping Tool Cap and Cutter
10. DPU Interview - August 17, 2006
11. NSTAR Operating & Maintenance Procedures
12. Central Plastic's HVTT Procedures (2000)
13. Central Plastics' Revised HVTT Procedures (May, 2001)
14. Drug Test Results
15. Leakage Survey Results
16. Other Leakage Survey Results
17. Training Records
18. Operator Qualification Records
19. Odor Tests

EXHIBIT 1

NSTAR Incident Report Form PHMSA F 7100.1

IR PESD 1-7
Attachment
U.S. Department of Transportation
Incident Report
Gas Distribution System



One NSTAR Way
Westwood, Massachusetts 02090

June 14, 2006

Office of Pipeline Safety
Information Resources Manager
DPS-13
400 7th St. S.W.
Washington, D.C. 20590

Re: April 28, 2006 Incident
NRC Report Number 795518

To Whom It May Concern:

Attached is the original report concerning the above-referenced incident. Please contact me at (781) 441-8421 if you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Jonathan Pfister", written in a cursive style.

Jonathan Pfister
Manager, Compliance and Corrosion

c: Mr. Christopher J. Bourne
Massachusetts Department of Telecommunications and Energy
Pipeline Engineering and Safety Division
One South Station
Boston MA 02110



U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration

INCIDENT REPORT - GAS DISTRIBUTION SYSTEM

Report Date No. (DOT Use Only)

INSTRUCTIONS

Important: Please read the separate instructions for completing this form before you begin. They clarify the information requested and provide specific examples. If you do not have a copy of the instructions, you can obtain one from the Office Of Pipeline Safety Web Page at http://ops.dot.gov.

PART A - GENERAL REPORT INFORMATION

Check: X Original Report Supplemental Report Final Report

1. Operator Name and Address

- a. Operator's 5-digit Identification Number / 0 / 2 / 6 / 5 / 2 /
b. If Operator does not own the pipeline, enter Owner's 5-digit Identification Number / / / / / /
c. Name of Operator NSTAR Gas Company
d. Operator street address One NSTAR Way
e. Operator address Westwood, Norfolk, Massachusetts 02090
City, County or Parish, State and Zip Code

2. Time and date of the incident

/ 1 / 3 / 5 / 0 / / 0 / 4 / / 2 / 8 / / 0 / 6 /
hr. month day year

3. Incident Location

- a. Webster Street @ Harris Avenue
Street or nearest street or road
b. Needham, Middlesex
City and County or Parish
c. Massachusetts 02492
State and Zip Code
d. Latitude: / 4 / 2 / 1 / 2 / 7 / Longitude: / - / 7 / 1 / 1 / 2 /
(if not available, see instructions for how to provide specific location)
e. Class location description
O Class 1 O Class 2 X Class 3 O Class 4
f. Incident on Federal Land O Yes X No

4. Type of leak or rupture

- O Leak: O Pinhole O Connection Failure (complete sec. F5)
O Puncture, diameter or cross section (inches)
O Rupture (if applicable):
O Circumferential - Separation
O Longitudinal
- Tear/Crack, length (inches)
- Propagation Length, total, both sides (feet)
O N/A
X Other: Leak from top of high volume tapping tee

5. Consequences (check and complete all that apply)

- a. O Fatality Total number of people: / / / / /
Employees: / / / / / General Public: / / / / /
Non-employee Contractors: / / / / /
b. X Injury requiring inpatient hospitalization
Total number of people: / 0 / 0 / 1 /
Employees: / 0 / 0 / 1 / General Public: / 0 / 0 / 0 /
Non-employee Contractors: / 0 / 0 / 0 /
c. X Property damage/loss (estimated) Total \$ 21,000
Gas loss \$ 3,000 Operator damage \$ 18,000
Public/private property damage \$ 0
d. X Gas ignited O Explosion X No Explosion
e. O Gas did not ignite O Explosion O No Explosion

6. Elapsed time until area was made safe:

/ 0 / 0 / hr. / 4 / 5 / min.

7. Telephone Report

/ 7 / 9 / 5 / 5 / 1 / 8 / / 0 / 4 / / 2 / 8 / / 0 / 6 /
NRC Report Number month day year

8. a. Estimated pressure at point and time of incident:

57 PSIG

b. Max. allowable operating pressure (MAOP): 60 PSIG

c. MAOP established by:

- X Test Pressure 100 psig
O 49 CFR § 192.619 (a)(3)

PART B - PREPARER AND AUTHORIZED SIGNATURE

Jonathan Pfister, Manager, Compliance and Corrosion
(type or print) Preparer's Name and Title

781-441-8421
Area Code and Telephone Number

jonathan.pfister@nstaronline.com
Preparer's E-mail Address

781-441-3486
Area Code and Facsimile Number

Jonathan Pfister (preparer)
Authorized Signature (type or print) Name and Title

8/14/06 Date 781-441-8421 Area Code and Telephone Number

PART C - ORIGIN OF THE INCIDENT

1. Incident occurred on

- Main Meter Set
- Service Line Other: _____
- Pressure Limiting and Regulating Facility

2. Failure occurred on

- Body of pipe Pipe Seam
- Joint Component
- Other: Electrofusion High Volume Tapping Tee

3. Material involved (pipe, fitting, or other component)

- Steel
- Cast/Wrought Iron
- Polyethelene Plastic (complete all items that apply in a-c)
- Other Plastic (complete all items that apply in a-c)
Plastic failure was: a. ductile b. brittle c. joint failure
- Other material: _____

4. Year the pipe or component which failed was installed: 2 / 0 / 0 / 6 /

PART D - MATERIAL SPECIFICATION (if applicable)

- 1. Nominal pipe size (NPS) 10 / 0 / 0 / 2 / in.
- 2. Wall thickness / / / / / in.
- 3. Specification PE 2406 SMYS / / / / / / / / / / /
- 4. Seam type _____
- 5. Valve type _____
- 6. Pipe or valve manufactured by Central Plastics Company in year 2 / 0 / 0 / 5 /

PART E - ENVIRONMENT

- 1. Area of incident In open ditch
- Under pavement Above ground
- Under ground Under water
- Inside/under building Other: _____
- 2. Depth of cover: _____ inches

PART F - APPARENT CAUSE

Important: There are 25 numbered causes in this section. Check the box to the left of the primary cause of the incident. Check one circle in each of the supplemental items to the right of or below the cause you indicate. See the instructions for this form for guidance.

F1 - CORROSION

If either F1 (1) External Corrosion, or F1 (2) Internal Corrosion is checked, complete all subparts a - e.

1. External Corrosion

- a. Pipe Coating
 - Bare
 - Coated
 - Unknown
- b. Visual Examination
 - Localized Pitting
 - General Corrosion
 - Other: _____
- c. Cause of Corrosion
 - Galvanic Stray Current
 - Improper Cathodic Protection
 - Microbiological
 - Other: _____

2. Internal Corrosion

- d. Was corroded part of pipeline considered to be under cathodic protection prior to discovering incident?
 No Yes Unknown Year Protection Started: / / / / / /
- e. Was pipe previously damaged in the area of corrosion?
 No Yes Unknown How long prior to incident: / / / years / / / months

F2 - NATURAL FORCES

- 3. Earth Movement => Earthquake Subsidence Landslide Other: _____
- 4. Lightning
- 5. Heavy Rains/Floods => Washouts Flotation Mudslide Scouring Other: _____
- 6. Temperature => Thermal stress Frost heave Frozen components Other: _____
- 7. High Winds

F3 - EXCAVATION

- 8. Operator Excavation Damage (including their contractors) / Not Third Party
- 9. Third Party Excavation Damage (complete a-d)
 - a. Excavator group
 - General Public Government Excavator other than Operator/subcontractor
 - b. Type: Road Work Pipeline Water Electric Sewer Phone/Cable/Fiber Landowner Railroad
 Building Construction Other: _____
 - c. Did operator get prior notification of excavation activity?
 No Yes: Date received: / / / mo. / / / day / / / yr.
Notification received from: One Call System Excavator General Contractor Landowner
 - d. Was pipeline marked?
 No Yes (If Yes, check applicable items i - iv)
 - i. Temporary markings: Flags Stakes Paint
 - ii. Permanent markings: Yes No
 - iii. Marks were (check one) Accurate Not Accurate
 - iv. Were marks made within required time? Yes No

F4 - OTHER OUTSIDE FORCE DAMAGE

- 10. Fire/Explosion as primary cause of failure => Fire/Explosion cause: Man made Natural Describe in Part G
- 11. Car, truck or other vehicle not relating to excavation activity damaging pipe
- 12. Rupture of Previously Damaged Pipe
- 13. Vandalism

F5 - MATERIAL OR WELDS

Material

- 14. Body of Pipe ⇒ Dent Gouge Wrinkle Bend Arc Burn Other: _____
- 15. Component ⇒ Valve Fitting Vessel Extruded Outlet Other: _____
- 16. Joint ⇒ Gasket O-Ring Threads Fusion Other: _____

Weld

- 17. Butt ⇒ Pipe Fabrication Other: _____
- 18. Fillet ⇒ Branch Hot Tap Fitting Repair Sleeve Other: _____
- 19. Pipe Seam ⇒ LF ERW DSAW Seamless Flash Weld Other: _____
- HF ERW SAW Spiral Other: _____

Complete a-f if you indicate any cause in part F5.



a. Type of failure:

- Construction Defect ⇒ Poor Workmanship Procedure not followed Poor Construction Procedures
- Material Defect

b. Was failure due to pipe damage sustained in transportation to the construction or fabrication site? Yes No

c. Was part which leaked pressure tested before incident occurred? Yes, complete d-f, if known No

d. Date of test: / / mo. / / day / / yr.

e. Time held at test pressure: / / hr.

f. Estimated test pressure at point of incident: _____ PSIG

F6 - EQUIPMENT OR OPERATIONS

- 20. Malfunction of Control/Relief Equipment ⇒ Valve Instrumentation Pressure Regulator Other: _____
- 21. Threads Stripped, Broken Pipe Coupling ⇒ Nipples Valve Threads Mechanical Couplings Other: _____
- 22. Leaking Seals

23. Incorrect Operation

a. Type: Inadequate Procedures Inadequate Safety Practices Failure to Follow Procedures Other: _____

b. Number of employees involved in incident who failed post-incident drug test: / / / Alcohol test: / / /

c. Was person involved in incident qualified per OQ rule? Yes No d. Hours on duty for person involved: / / /

F7 - OTHER

24. Miscellaneous, describe: _____

25. Unknown

Investigation Complete Still Under Investigation (submit a supplemental report when investigation is complete)

PART G - NARRATIVE DESCRIPTION OF FACTORS CONTRIBUTING TO THE EVENT (Attach additional sheets as necessary)

The injured employee was tapping the 2 inch high volume tapping tee installed on an existing 2inch intermediate pressure plastic main. The electrofusion tapping tee was one of four taps planned on a double bypass to facilitate a main cutout in conjunction with a leak repair. An employee in close proximity in the same trench who was preparing a second tap reported hearing a "blowing sound". As he turned toward the location of the tap in progress he observed the gas ignition and immediately assisted the injured employee exit the trench. The gas continued to escape through the top of the tapping tee and burn until main isolation valves were closed and the fire allowed to extinguish

EXHIBIT 2

DPU Log Book - April 28, 2006

APRIL

28

FRIDAY

2006 118th day - 247 days follow

2:15 PM NSTAR DAVE WARD (508) 328-2100 (CP)
NSTAR REPORTED AN IGNITION OF GAS FROM
A 100 PSI MAIN AT WEBSTER, HARRIS STS., NEEDHAM
ONE PERSON WAS SERIOUSLY BURNED. RON ENROUTE
TO SCENE. NOTIFIED TIM, ANDY, GAIL, JAMES; ALSO
MARK WENDOLFF AT DOT - EASTERN REGION.

-Chris Bourne

EXHIBIT 3

Fire Department Incident Report

IR PESD 1-11
Attachment
Needham Fire Department
Incident Report

NEEDHAM FIRE DEPARTMENT

Incident Report

Page 1

Date: 6/12/06, 14:29:22

Program: FI200L

```

=====
A 21199 MA      4/28/06      Station #1      01-2006-0001064-000      NFIRS - 1
  FDID State    Incident date  Station          Incident number              Basic
=====

```

```

=====
B          No                                     Intersection          Yes
  Alternative location Census tract          Location              Emergency
=====

```

WEBSTER ST, NEEDHAM, MA, 02494

HARRIS AVE

Address

Cross street or directions

```

=====
C Outside gas or vapor combustion explosion
  Incident type
=====

```

```

=====
D Automatic aid received
  Aid given or received
=====

```

```

=====
E1          Date      Time      | E2 Group 3          1      Station 1
  Alarm      4/28/06 13:48:43 | Shift              Alarms District
  Arrival    4/28/06 13:52:19 |
  Controlled 0/00/00 0:00:00 |
  Last unit cleared 4/28/06 21:39:55 |
=====

```

```

=====
F Provide advanced life support (ALS)          Standby
  Primary action taken (1)          Additional action taken (2)
=====

```

```

=====
G1  Yes          Apparatus Personnel  Yes      | G2          Losses      Value
  parater/ Suppression 5          10      Resource count# | Property    5000      5000
  personnel EMS          1          2      include aid | Contents    0          0
  form used  other      3          2      received resources |
=====

```

```

=====
H1          Injuries Deaths |          | H3 None
  Fire service 0      0 |          | Hazardous materials release
  Civilian fire 1      0 |          |
=====

```

```

=====
I Not mixed use          | J Residential street, road or residential driveway
  Mixed use property    |          | Property use
=====

```

```

=====
K1 NPD/ON SCENE          Reporting party
  Name          Involvement type          Phone number
  000000          |          | 0/00/0000
  Address          Gender Age Birth date Race
=====

```

MR. JOHN ARSENAULT

PATIENT

Name
30 CRIMSON RD, BILLERICA, MA
Address

Involvement type
Phone number
0/00/0000
Gender Age Birth date Race

```

=====
M JOHN F. WHALEN          Deputy Chief          SHIFT COMMANDER          4/28/06
  Officer in charge          Position or rank          Assignment          Date
=====

```

NEEDHAM FIRE DEPARTMENT

Incident Report

Reported: 6/13/06. 14:29:22
Program: FI200L

A	21199 MA	4/28/06	Station #1	01-2006-0001064-000	NFIRS - 2
	FDID State	Incident date	Station	Incident number	Fire

B1	Not residential	C	Natural gas	Undetermined
	Estimated number of residential units		On-site material 1	Material 1 storage use

B2 Buildings not involved
Number of buildings involved

B3 None
Acres burned (outside fires)

D1	Construction/renovation area	E1	Cause under investigation
	Area of fire origin		Cause of ignition

D2	Undetermined	E2	Undetermined
	Heat source		Factor 1 contributing to ignition

D3	Flammable liquid/gas - uncontained	E3	None
	Item first ignited		Human factors contributing to ignition
	No		
	Spread confined to object of origin		

D4	Natural gas		
	Type of material first ignited		

F1	None	F2	Equipment power
	Equipment involved in ignition		
	Brand	F3	Equipment portability
	Model		
	Serial number		
	0000		
	Equipment year		

G None
Fire suppression factor 1

H1	None	H2	Mobile property type
	Mobile property involved		Mobile property make
			Mobile property model
			0000
			Year License plate State VIN

NEEDHAM FIRE DEPARTMENT

Incident Report

Time: 6/12/06, 14:29:22

Program: FI200L

```

=====
A 21199 MA      4/28/06      Station #1      01-2006-0001064-000      NFIRS - 9/10
PDID State      Incident date Station      Incident number      Apparatus/Personnel
=====

```

```

B Apparatus  Type      Personnel Use      Action taken      Emergency
E1      Engine      5      Suppression
    Dispatched      4/28/06 13:50:26
    At Scene      4/28/06 13:54:00
    Enroute To Quarters  4/28/06 17:17:23
    In Service      4/28/06 18:39:15

```

```

Employee      Assignment      Position      Action taken
2986 SHAWN DONOVAN      FIREFIGHTER      Firefighter
6971 WILLIAM A. MCDANIEL      DRIVER      Firefighter
7681 MARK R. RICKER      FIREFIGHTER      Firefighter
8577 WILLIAM R. BYRNES      COMPANY OFFICER      Captain
9890 SEAN IRVING      FIREFIGHTER      Firefighter

```

```

=====
B Apparatus  Type      Personnel Use      Action taken      Emergency
E4      Engine      3      Suppression
    Dispatched      4/28/06 13:50:26
    At Scene      4/28/06 13:54:25
    Enroute To Quarters  4/28/06 14:37:48
    In Service      4/28/06 15:06:46

```

```

Employee      Assignment      Position      Action taken
2148 ALAN E. HOPKINS      FIREFIGHTER      Firefighter
2748 PETER J. VIGLIANO      FIREFIGHTER      Firefighter
5384 JOHN E. BENEDICT      DRIVER      Firefighter

```

```

=====
B Apparatus  Type      Personnel Use      Action taken      Emergency
FC1      Chief officer car      0      Other
    Dispatched      4/28/06 13:51:52
    At Scene      4/28/06 13:52:19
    Enroute To Quarters  4/28/06 18:06:07
    In Service      4/28/06 18:39:15

```

```

=====
B Apparatus  Type      Personnel Use      Action taken      Emergency
FC2      Chief officer car      1      Other
    Dispatched      4/28/06 13:50:26
    At Scene      4/28/06 13:54:00
    In Service      4/28/06 19:06:55

```

```

Employee      Assignment      Position      Action taken
6083 JOHN F. WHALEN      SHIFT COMMANDER      Deputy Chief

```

```

=====
B Apparatus  Type      Personnel Use      Action taken      Emergency
FC43      Fire Prevention      1      Other
    Dispatched      4/28/06 15:25:58
    At Scene      4/28/06 15:26:01
    In Service      4/28/06 19:06:55

```

```

Employee      Assignment      Position      Action taken
4223 ARTHUR HOPKINS      INSPECTOR      Inspector

```

NEEDHAM FIRE DEPARTMENT

Incident Report

Prepared: 6/12/06, 14:29:22

Program: FI200L

```

=====
A 21199 MA      4/28/06      Station #1      01-2006-0001064-000      NFIRS - 9/10
  FDID State      Incident date Station      Incident number      Apparatus/Personnel
=====

```

```

=====
B Apparatus  Type      Personnel  Use      Action taken      Emergency
  FC6      Brush truck      0      Suppression
  Dispatched      4/28/06  14:25:56
  At Scene      4/28/06  14:26:01
  In Service      4/28/06  21:39:55
=====

```

```

=====
B Apparatus  Type      Personnel  Use      Action taken      Emergency
  L1      Truck or aerial      2      Suppression
  Dispatched      4/28/06  13:50:26
  At Scene      4/28/06  13:58:03
  Enroute To Quarters      4/28/06  15:16:45
  In Service      4/28/06  15:28:56
=====

```

```

Employee      Assignment      Position      Action taken
5147 RICHARD T. FOLEY JR      DRIVER      Firefighter
8762 LEONARD A. MARINI      FIREFIGHTER      Firefighter
=====

```

```

=====
B Apparatus  Type      Personnel  Use      Action taken      Emergency
  R1      Rescuc unit      3      EMS
  Dispatched      4/28/06  13:50:26
  At Scene      4/28/06  13:54:00
  To Hosptial      4/28/06  14:05:21
  In Service      4/28/06  17:17:32
=====

```

```

Employee      Assignment      Position      Action taken
626 GLEN R. SARGENT      DRIVER      Firefighter
8563 ROBERT GIUMETTI      FIREFIGHTER      Firefighter
9890 SEAN IRVING      FIREFIGHTER      Firefighter
=====

```

```

=====
B Apparatus  Type      Personnel  Use      Action taken      Emergency
  WES      Engine      0      Suppression
  Dispatched      4/28/06  14:20:05
  At Scene      4/28/06  14:20:08
  In Service      4/28/06  15:17:30
=====

```

NEEDHAM FIRE DEPARTMENT

Incident Report

Prepared: 6/12/06, 14:29:22

gram: FT200L

```

=====
A 21199 MA      4/28/06      Station #1      01-2006-0001064-000
FDID State    Incident date Station      Incident number      Additional information
=====

```

```

Day of week . . . . . : 006 Friday
Common name . . . . . :
Suit/PPE level . . . . . :
Critical incident . . . . . : Y=Yes, N=No
Team mobilization . . . . . : Y=Yes, N=No
Circumstances 1 . . . . . :
Circumstances 2 . . . . . :
Circumstances 3 . . . . . :
Number of entries . . . . . : 000
Tier level . . . . . :
Vehicle is stolen . . . . . : Y=Yes, N=No
Property insurance company name . . . :
Total insurance amount . . . . . : 0000000000

```

NEEDHAM FIRE DEPARTMENT

Incident Report

Page 6

Prepared: 6/12/06, 14:29:22

Alarm: FI200L

```

=====
A 21199 MA      4/28/06      Station #1      01-2006-0001064-000
  FDID State   Incident date  Station          Incident number      Narratives
=====

```

B Narrative type: Incident

```

Narrative title      Entry date  Entered by employee
Dispatch narrative    4/28/06    1625 DAVID A. STEWART
061180063

```

Call#: 061180063 Beat: Station 1

Units.: E1

Units.: E4

Units.: FC1

Units.: FC2

Units.: FC43

Units.: FC6

Units.: L1

Units.: PAS

Units.: R1

Units.: WES

pd detail reports a gas explosion with a person with serious burns.

c2 notify medflight to see if avail./they were avail.if needed.at 1348 hrs.

f/f stark f/f filosa responded in c6 to scene

medflight notif.updated on ground transp.of nfd r1 to ma.gen.

c1 rpts.evacuate webster/harris at 1355 hrs.

c1 rpts.command post at ded./harris at 1400 hrs.

ded.l1,notif.to cover sta.1 at 1354 hrs.

newt.e7 to cover at sta.2 at 1355 hrs.

westwood eng.5 to sta.1 at 1359 hrs.

metro notif.of box 133 struck for gas explosian at 1356 hrs.

amr disp.notif.to have a med.trk.cover town at 1400 hrs.

nstar electric/nstar gas notif.to respond to scene at 1410

hrs.c43 responded to pollard school to keep kids in school

at 1410 hrs.the n.h.s.notif.of keeping kids in school at

1416 hrs.r1 to m.g.h.at 1406 hrs./a/h at 1427 hrs.well.e2

notif.at 1417 hrs.to cover sta.1

c1 rpts.main gas line valve shutdn.at 1424 hrs.,power shut

dn.at 1433 in area of scene/gen.kicked in at sta.1 1433

hrs.

brookline e2 notif./cancelled same time 1415 hrs.to cover

sta./well.e2 instead covered sta.1.

c3 notif.at 1450 hrs.

c43 rpts.kids fro pollard school transp.by bus to defazio field.

r1 back from m.g.h.in needeham/going to b.i.d.g.n.c.

c2 rpts.released e4 to qrts.at 1435,westwood e5 to nfd

sta.1/they were released at 1435 hrs.

ded.e-3 notif./cancelled to cover sta.1 at 1445 hrs.

westwood e5 cleared to return to qrts,orders of c1 at 1445

hrs.newt.e7 cleared at 1448 hrs.

c2 released ded.l1 to ded.qrts-at 1512 hrs.

NEEDHAM FIRE DEPARTMENT

Incident Report

Page 7

Prepared: 6/12/06, 14:29:22

Program: FT200L

FDID	State	Incident date	Station	Station #1	Incident number	Narratives
A 21199	MA	4/28/06			01-2006-0001064-000	

B Narrative type: Incident

Narrative title	Entry date	Entered by employee
Dispatch narrative	0/00/00	
call backs notif.dept.al,f/f sullivan,f/f filosa,lt.longley f/f stark,f/f kana,f/f friel.disp.mazzone,sup.mccarthy came in to assist with incident. health dept./janice burns notif. per deputy al, needham public library is the shelter for the read's. the lib. needs to be called when the ok sign is giving for the read. to return. c1 rpta.state d.e.p.on scene c2 notified that npd to notify osha, lt. lambert notified. osha responding :nat kadis and bob volinsky epa called a mike barry checked with c1 they are not needed unless they have a protol that they need to respond per dep al wel e2 is clear to return metro not wel e2 has been returned nstar is trying to open up the area by 6pm per c1 per dep al amr medic 4 cleared to return ff kana,friel,lt longley and dep al delulio all out on box 133		

Narrative title	Entry date	Entered by employee
Deputy	4/28/06	6083 JOHN F. WHALEN
Initial report outside gas ignition Webster St. at Harris Ave.with burn injury to workman. Upon arrival workman with burns located on Harris Ave. approx 40 yards east of road opening were ignition occurred. Workman treated and transported by crew of R-1. Gas main in road opening being serviced provided fuel,ignition source undetermined at this time. No adjacent exposures,area cordoned off. Gas main shut down NSTAR.		

EXHIBIT 4

Main Segments

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-4: Provide records for the mains on Webster Street and Harris Avenue, including but not limited to, installation date, maximum allowable operating pressure (“MAOP”), and operating pressure at the time of the incident. Include in your response a description of any maintenance or replacement work performed on the main within the last five years.

There are four segments of main on Webster Street (between Great Plain Avenue and Dedham Avenue) and Harris Avenue. These segments are:

- a. 1307 feet of 3” bare steel pipe installed in 1926 (located on Webster Street)
- b. 196 feet of 2” bare steel pipe installed in 1957 (located on Harris Avenue)
- c. 268 feet of 2” plastic pipe installed in 1986 (located on Harris Avenue)
- d. 84 feet of 2” plastic pipe installed in 1987 (located on Harris Avenue).

The MAOP for all of these segments is 60 psig. The installation records (including pressure test data) for the two plastic segments installed in 1986 and 1987 are provided herewith as IR PESD 1-4 (a) and (b). Telemetered pressure data available through the Company’s SCADA system and measured at two points, Charles River Street and the Needham Industrial Park, indicated that the segments were operating at approximately 57 psig at the time of the incident. The SCADA reports are included herewith as IR PESD 1-4(c).

Attached are the O&M records for the main segments listed above over the past five years. In the past five years, there have been three repairs on these segments in the area of Harris Avenue and Webster Street. The locations of these repairs are as follows:

- Harris Avenue at Webster Street (7/26/04). Repaired a Class 2 leak on segment of bare steel main installed in 1957 (IR PESD 1-4(d)).
 - Webster Street at Harris Avenue (12/15/03). Repaired a Class 2 leak on segment of bare steel main installed in 1926 (IR PESD 1-4(e)).
 - Webster Street at Harris Avenue (8/4/02). Repaired a Class 3 leak on segment of bare steel main installed in 1926 (IR PESD 1-4(f)).
-

EXHIBIT 5

NSTAR Description of Incident

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-1: Describe in detail the sequence of events. Include in your response a description of the incident, the reason the crew was working at this location, what the individual crew members were doing at the time the incident occurred, the cause of the gas to ignite and the actions the crew members took to make the area safe.

On April 28, 2006, an NSTAR Gas crew was performing a routine repair of a Class 2 leak at the intersection of Webster Street and Harris Avenue in Needham, MA. The leak was first detected and reported to the Company on April 14, 2006. The crew assigned to the job included Kevin McCusker (Backhoe Operator), Bob Falvey (Distribution Tech), Kevin Soule (Distribution Tech) and John Arsenault (Distribution Tech). The leak area was excavated in advance of the planned repair date in preparation for the repair. Once the leak area was excavated, it became apparent that the configuration of the system would require a four-way main cut-out procedure to eliminate the leak. Part of this procedure involved installing bypasses to reroute the gas and allow for continued flow of gas to customers following the cut-out. In addition, the Supervisor, Mr. William Bowler, conducted a job briefing with Jose Miranda (Supervisor, Gas Distribution), John Arsenault, Kevin McCusker, Kevin Soule and Mike Burns (Distribution Tech) covering the tie-in piece, air testing, the sequence for tapping the four tees included in the tie-ins, as well as the locations of the existing valves on Webster Street at Dedham Avenue and Webster Street at Great Plain Avenue. On the day of the incident, Bill Bowler met the crew onsite at 8:30 a.m. and again reviewed the job and then instructed the crew to begin work. Jerry Lucey (Welder/Distribution Tech) was assigned to meet the crew and weld on the Williamson tees needed to complete the job. At 11:35 a.m., Bob Falvey reported he had an emergency at home and needed to leave the work site. Jerry Lucey had completed his work so Bill asked him to drive Bob Falvey to the shop. The crew completed all preparation work at 12:30 p.m. and pressure tested the tie-in piece. The crew was then instructed to go to lunch. The crew returned from lunch and removed the pressure test. Bill instructed the crew to proceed with the main taps. Bill returned to the office to obtain additional paperwork for the job.

According to a member of the NSTAR crew (Kevin McCusker), the pressure test was removed at 1:45 p.m. and John Arsenault began the task of tapping all four locations. John's first tap was located on the 2" plastic line on the south side of Harris Avenue. The tap involved a 2" high volume punch tee. John started the tap and Kevin prepared the next tap on the 3" steel line. Kevin heard what appeared to be a blowing sound from the 2" tap John was working on. Kevin turned towards John and the gas ignited within a few seconds. Kevin and John immediately climbed out of the hole. Kevin Soule and Kevin McCusker assisted John to safety.

At 1:53 p.m., Jose Miranda received a call from gas-service dispatch that there was an ignition at the intersection of Webster Avenue at Harris Avenue. Jose informed Bill

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

(Response to IR-PESD-1-1 continued)

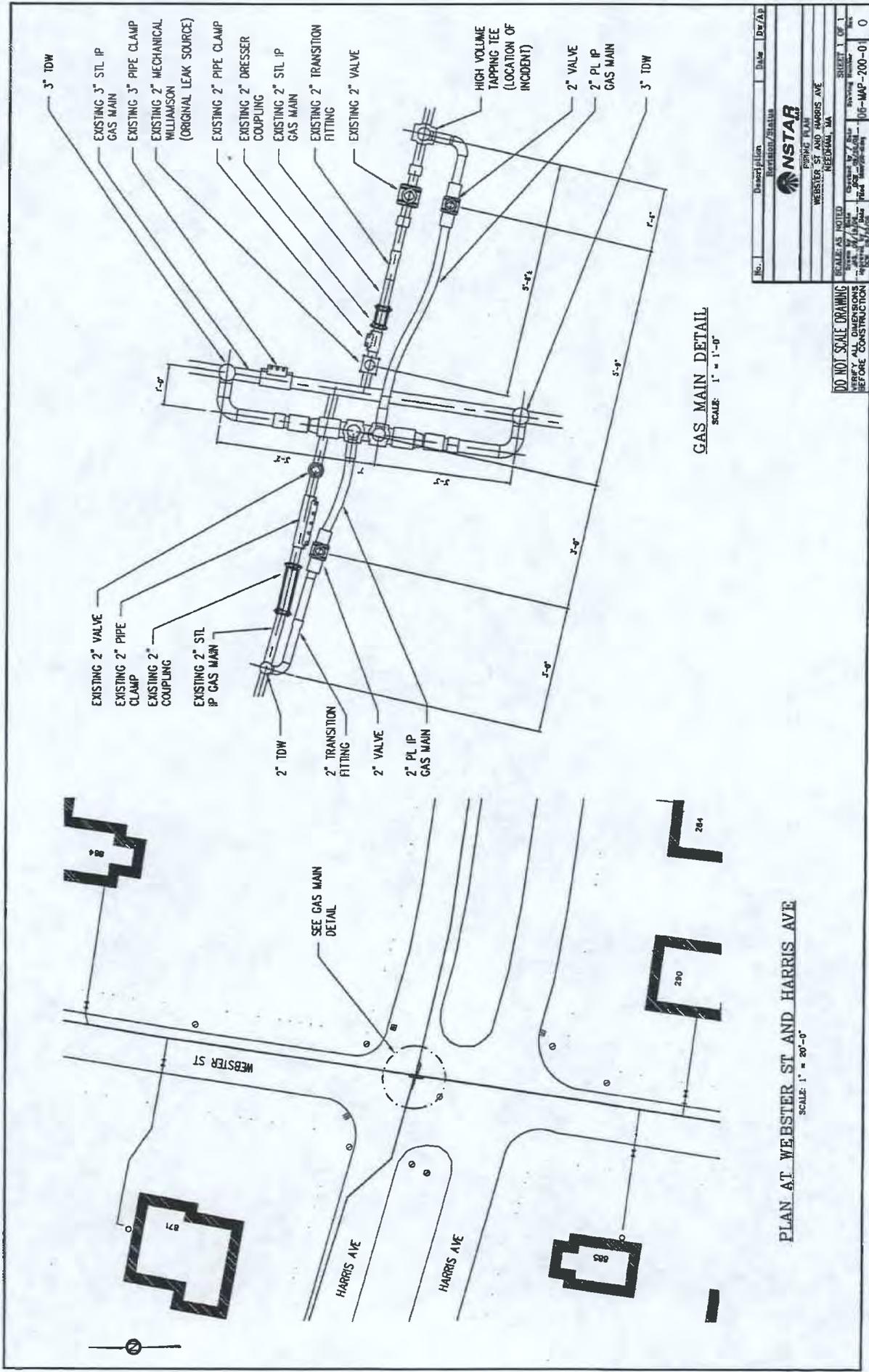
Bowler of the call and both supervisors directly proceeded to the scene. While enroute to the scene, Kevin McCusker called on the radio for an "emergency" and asked all available Distribution personnel to report to the incident. Bill Bowler arrived at the scene at 2:11 p.m. and assessed the situation. The gas was ignited and burning. Bill instructed the Needham Fire Department to stand-by while the gas was shut off. Bill instructed Distribution personnel to close valves at the intersections of Webster Street and Great Plain Avenue and Webster Street and Dedham Avenue isolating the gas segment. The valves were closed at 2:32 p.m. and the flame was extinguished.

Gas Distribution personnel continued to work on removing the damaged section of pipe and fabricating a new tie-in piece. DTE and OSHA inspectors observed the work being performed. Gas Distribution personnel finished the tie-in piece and tested the line. The tie-in piece was installed and tied in to the intersection of Webster Street at Harris Avenue. The sequence to restore gas began at 9:14 p.m. At 9:20 p.m., the gas to the main on Webster Street was turned on and purged. At 9:23 p.m., 903 Webster Street was turned on and the customer's gas was restored. The same procedure was followed for two other segments of main on Harris Avenue. The opening at Webster Street and Harris Avenue was backfilled and the scene cleared at 1:45 a.m.

EXHIBIT 6

Sketch of Proposed Main Repair

IR-PESD-2-7



GAS MAIN DETAIL
SCALE: 1" = 1'-0"

PLAN AT WEBSTER ST AND HARRIS AVE
SCALE: 1" = 20'-0"

No.	Description	Date	Dr/Ad
	REVISION/STATUS		
NSTAR			
PUMPING & AIR			
WEBSTER ST AND HARRIS AVE			
NEEDHAM, MA			
SCALE: AS NOTED			
DATE OF ISSUE	DATE OF REV.	ISSUED BY	REVISION
08/11/10	08/11/10	08/11/10	08/11/10
DO NOT SCALE DRAWING			SHEET 1 OF 1
VERIFY ALL DIMENSIONS			PROJECT NO. JG-MAP-200-01
BEFORE CONSTRUCTION			0

EXHIBIT 7

Photograph of the Existing Mains and the Tie-in Section



EXHIBIT 8a

Photograph of the HVTT



EXHIBIT 8b

Photograph of the HVTT - Closeup

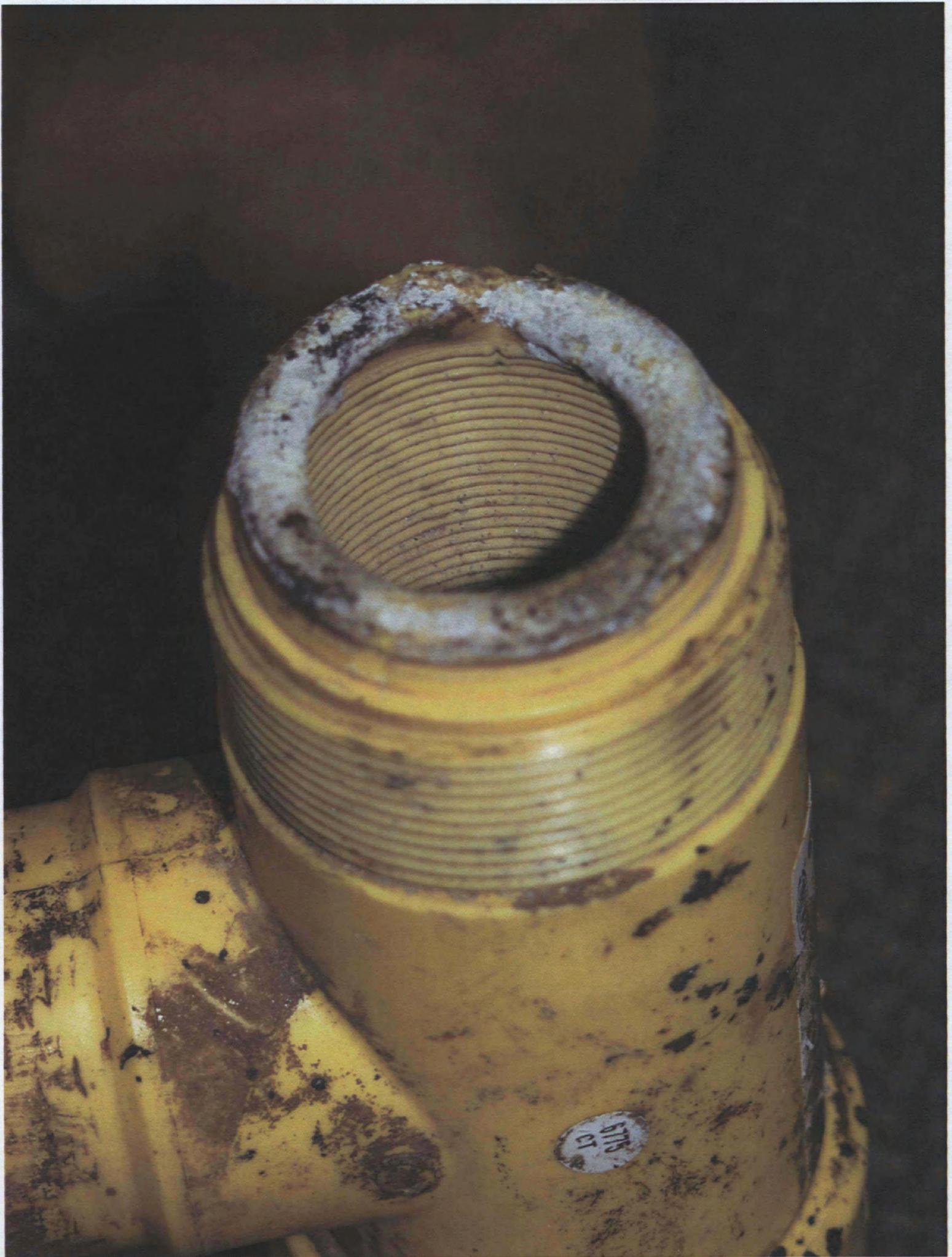


EXHIBIT 9a

Photograph of the Tapping Tool



EXHIBIT 9b

Photograph of the Tapping Tool Cap and Cutter



EXHIBIT 10

DPU Interview - August 17, 2006

SUBJ.: Interview with John Arsenault, NSTAR Employee- August 17,2006
TO: The Files
FROM: R. P. Danielson
DATE: August 18, 2006

On August 17, 2006, at 10:00 A.M. R. Danielson and Glenn LaChance, Investigators for the Department of Telecommunications and Energy's ("Department") Pipeline Engineering & Safety Division ("Division") met with Mr. John Arsenault of NSTAR Gas Company and G. Gregory Howard, Esq., in Attorney Howard's office at 45 Merrimack Street, Lowell, MA. The purpose of this meeting was to interview Mr. Arsenault as part of the investigation of the natural gas incident ("Incident") that occurred at Webster Street and Harris Avenue, Needham, on April 28, 2006.

Mr. Arsenault is a Distribution Tech A and has been in this position for the past ten years. He has also been a backhoe operator for the past five years. On August 12, 2006, he completed 21 years of employment with NSTAR and its predecessor company. His reporting work location is:

843 Rear Hyde Park Avenue
Hyde Park, MA

Mr. Arsenault stated he was in the hospital (Mass General) for two weeks. He has been out of work since the date of the Incident. He has a doctor's appointment next week, and he is hoping to receive authorization to return to work in a light duty capacity. He has been told by the company they will have a position for him.

Mr. Arsenault stated he is current in his OQ certification.

Mr. Arsenault stated he was working with a crew at this location to make permanent repairs to a main in the intersection which had a history of gas leaks. There had been a Grade 2 leak in this area for awhile, but he believed gas had migrated to the sewer and become a Grade 1 leak. He was not present the first two days when a crew excavated to expose the mains in the intersection. He came on the third day when the crew was to stop, tap and blank the leaking section of main and install a permanent bypass.

The new sections of main had been prefabricated and placed in the trench. Williamson stopping equipment and bypass piping had been installed on the existing main prior to cutting out the section to be replaced. A Central Plastics 2"IPS x 2"IPS HV TAP TEE was electrofused to the existing two-inch plastic main in Harris Avenue on the west side of the intersection.

Mr. Arsenault then began the procedure to tap the 2" High Volume Tapping Tee ("HVTT"). He could not say if the procedure to perform the electrofusion and the tapping of the HVTT were present at the job site. He stated he had a little trouble installing the retaining nut on the top of the punch of the High Volume Tapping Tee No Blow-by Tool ("No Blow-by Tool"). But he was able to accomplish this. He tightened the cap in the body of the HVTT until it was hand tight. He then began the tapping procedure to tap the existing 2" plastic main. When he

heard the sound of rushing gas and felt the change in resistance to the No Blow-by tool he knew from past experience that the tap had been made.

Mr. Arsenault could not say if the depth stop was against the top of the tool. He said he knows from past experience, feel and sound when a tap has been made. He also stated he has been involved with dozens of similar tapping procedures in the past.

Mr. Arsenault stated he then began the reverse procedure to remove the No Blow-by tool from the HVTT. At some point Kevin McCusker and he heard gas escaping from the Tee and became aware that the cap was loose and spinning with the No Blow-by Tool as he rotated the handle. He picked up the cap from the Tee to see what was there. At this time he stated he began to reset the cap to try to stop the flow of escaping gas. But as he was applying pressure to the handle, the gas pressure forced the equipment out of the Tee, permitting gas to escape from the open end of the HVTT.

Mr. Arsenault attempted to stop the flow of gas from the HVTT by placing his foot on top of the Tee until a coworker could shut off a nearby valve in the excavation. He was unable to do this, and a very short time later ignition of the gas occurred. Just prior, he heard a "snap" or a "pop" behind him.

Mr. Arsenault stated he was able to roll out of the trench by himself and lie on the pavement adjacent to the excavation. A coworker told him to lie down on his back and keep his arms up. He noticed that his arms were burned. He then requested crew members to move him from the sun into the shade.

Mr. Arsenault stated he was wearing:

- hard hat
- flame retardant safety vest
- 100% cotton short sleeve company-issue shirt
- sunglasses
- flame retardant company-issue long pants

Mr. LaChance asked him if he had a flame retardant long sleeve shirt. Mr. Arsenault replied that if the weather had been cooler he would have worn a long sleeve shirt, and there would not have been an issue.

Mr. LaChance stated to Messrs. Arsenault and Howard that the Division wants to get a full written and signed statement from Mr. Arsenault of all the facts relative to this Incident as he related them to us at the interview on August 17. Mr. LaChance stated we would request this through NSTAR.

Several questions arose during the interview:

1. How tight do you tighten the retaining nut on the punch?
2. Who performed the electrofusion?
3. When was the current model of the HVTT developed and used?
4. How long had NSTAR used this model of HVTT?
5. What maintenance is required to be done on the No Blow-by Tool?
6. What is the life expectancy of the Tool and parts (o rings)?
7. When was the last time Mr. Arsenault performed a tap on a 2" HVTT?

EXHIBIT 11

NSTAR Operating & Maintenance Procedures

IR PESD 2-15

What maintenance is required to be done on the No Blow-by Tool? What is the life expectancy of the O-rings that are part of the Tool? Provide the records of any maintenance performed on this tool.

Respondent: Ken Fontes/Bill McCabe

There is no specific maintenance recommended by the manufacturer and there is no specified life expectancy for the o-ring.

IR PESD 2-16

What is the life expectancy of the Tool? Include documentation to support this response.

Respondent: Ken Fontes

There is no life expectancy information provided by the manufacturer.

IR PESD 2-17

When was the last time Mr. Arsenault performed a live tap on a similar 2" HVTT?

Respondent: Bill McCabe

According to the Company's records, Mr. Arsenault was a member on various crews that performed 13 taps on plastic piping between January 1, 2006 and the time of the incident. On April 7, 2006, Mr Arsenault tapped an 8" X 2" HVTT while an inspector for a contractor crew.

IR PESD 2-18

Provide a copy of the NSTAR procedure for using the Central Plastics Company High Volume Tapping Tee No Blow-by Tool. Include in your response the manufacturer's procedures for using this tool.

Respondent: Bill McCabe, Vito Zuschlag

The procedure for using the HVTT No Blow-by Tool is set forth in the manufacturer's instructions provided in response to IR PESD 2-13.

EXHIBIT 12

Central Plastics' HVTT Procedures (2000)

IR PESD 2-11

How long has NSTAR Gas used this model of HVTT?

Respondent: Ken Fontes

As stated in response to IR PESD 2-10, production of the HVTT commenced in 1998 and by 2000, NSTAR Gas was purchasing this model of HVTT and providing training to employees on its use.

IR PESD 2-12

How long has NSTAR Gas used the model of HVTT No Blow-by Tool that was used at the incident?

Respondent: Bill McCabe/Ken Fontes/Vito Zuschlag

NSTAR Gas commenced use of the HVTT No Blow-by Tool in conjunction with its purchase and use of the HVTT in the 2000 timeframe.

IR PESD 2-13

Provide a copy of how employees are trained to tap a HVTT under pressure similar to the one that was being tapped for the Webster Street and Harris Avenue leak repair project? Include in your response the manufacturer's manual for the HVTT.

Respondent: Vito Zuschlag

NSTAR Gas employees are trained through instruction and visual demonstration on the use of the HVTT and HVTT No Blow-by Tool. The training for the HVTT No Blow by Tool is conducted in accordance with the manufacturer's operation instructions, a copy of which is attached. There are no specific manufacturer instructions or manual for the HVTT; however, the manufacturer does provide instructions on the fusing process, which are incorporated into the NGA Operator Qualifications procedures.

IR PESD 2-14

How tight does one tighten the retaining nut on the punch? Include documentation to support this response.

Respondent: Bill McCabe/Vito Zuschlag/Ken Fontes

Technicians are trained to hand tighten the retaining nut on the punch as illustrated in the manufacturer's instructions provided in response to IR PESD 2-13.



CENTRAL PLASTICS COMPANY

P.O. BOX 3129 SHAWNEE, OK USA 74802-3129

May 26, 2000

Dear Customer,

I am pleased to announce the official introduction of our new Wide Body Electrofusion, High Volume Tapping Tees and Branch Saddles. Several of you have already made the switch to these fittings and we thank you. We must arrange to move the balance of our customer base to these new fittings, as the old style tapping tees and branch saddles will soon be unavailable. Exhibit "A" provides a complete listing of the old and new fittings for easy cross-reference.

The new WIDE BODY Design offers a number of advantages over the old style fittings. These include:

- The old style HV fittings offered only 1.25 cutters in all base sizes.
- The Wide Bodies sport a 1.5" cutter on the 2" base and on all 3-8" bases with 1-1/4" outlets.
- The 3, 4, 6 and 8" x 2" fittings come with a 1.8" punch. This increased cutter size improves flow capability by up to 40% over the competition and our old fittings.
- For the first time, the Wide Body Design gives you a full range of 1-1/4" outlets.
- The Wide Body's double o-ring cap design makes positive seal easier to obtain.
- The threaded I.D. steel/or stainless steel punch assures coupon retention.
- The O-ring seal at the punch reduces blow-by significantly.
- Use of the No-blow by tapping tool in conjunction with these fittings virtually eliminates blow-by.
- These fittings are manufactured start-to-finish in Shawnee, OK.
- Best of all, these improved fittings are being offered without price increase to you.

The Wide Bodies have passed the full battery of required ASTM 2513 and F1055 tests. Each of the medium density fitting (with the exception of the 8") also carries the CSA listing. The 8" fittings have only recently completed the ASTM/DOT battery of test. These fittings are now being submitted to CSA for approval.

Central worked diligently to make this transition as effortless and inexpensive as possible for you, our customers. Most of your existing tooling will remain the same. However, there are a few tooling changes that correspond to with the introduction of these fittings:

- A. The Wide Body tapping tees requires a 5/8's hex tapping tool. See Exhibit "B" for the tapping tool options.
- For Gas Applications, we highly recommend P/N 575-8000. This tool allows the fitting to be tapped with virtually no blow-by. Pictures and operating instructions are enclosed.
 - If blow-by during tapping is of no concern, the new standard tapping tool is P/N 575-1907.
 - Exhibit "C" provides operating instructions for the use of the No Blow-by Tapping Tool.
- B. Exhibit "B" also introduces the test cap for the Wide Body Design.
- C. Exhibit "D" illustrates an inexpensive and quick method of modifying the Fusimatic 2" under-saddle clamp to make it compatible with the Wide Body design. This modification kit (P/N 575-1900) is only required on the older models of the 2" clamp that incorporates the knarled head bolts in it design.
- D. Exhibit "E" relates only to those customers who currently utilize the Top Load Clamp (575-2087) on 8" tapping tee applications. This details the need and use of a custom adapter suited to fit the Wide Body design.

Again, due to the superiority of this new wide body design our original (old style) high volume tapping tees and branch saddles will become obsolete. Once existing inventories of the old style fittings are depleted, they will not be available. Please contact me if you need any information or I can be of assistance with the approval process. Additional copies of the attachments are available upon request.

Finally, you may wish to take advantage of a special, limited quantity offer. Our original design of the Wide Body Fitting utilized an 1/2" hex, aluminum cutter. We made several of these before it became evident that the tapping performance on these fittings was unacceptable. We have removed the aluminum cutters and replaced them with the 5/8's hex, steel cutters. In the process, the ID o-ring was machined out of the fitting. Exhibit "F" offers these reworked fittings to you at a significant discount and they are available only as long as the existing stock remains. Central warrants the performance of these fittings. If you're interested in this offer, contact your Central Plastics CSR today.

Thank you for choosing Central Plastics. If you have any questions, please feel free to call your Customer Service Representative or Regional Sales Manager. Our toll free number is 800-654-3872.

Sincerely



Product Manager
Gas Division



Central Plastics Company

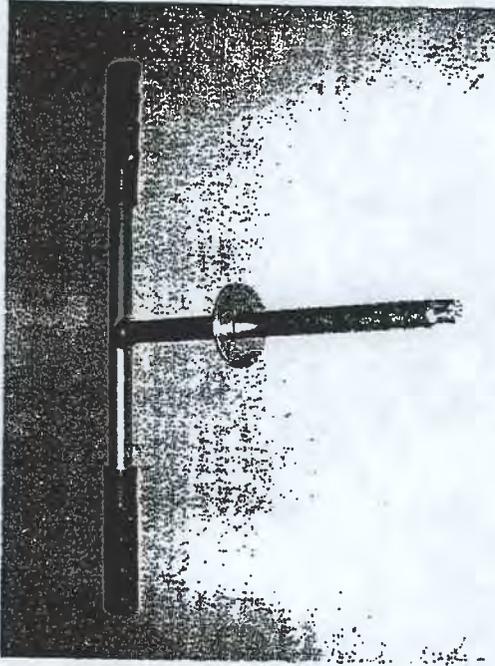
Exhibit "B"

Wide Body Tapping Tools & Test Caps

Blow-by Eliminating Tapping Tool (575-8000)



Standard Tapping Tool for Wide Body Tapping Tees (575-1907).



Recommended for Gas Applications



Wide Body Test Cap (575-1899)

NOTE: HVTT Punch Tool (575-0202) will not operate properly on the Wide Body Tapping Tees.

As of April 19, 2000

No Blow-by Punch Tool

For use with Central Plastics High Volume Tapping Tee)

Operation Instructions

The Central Plastics high volume tapping tee should be fused to the pipe using the standard procedures for the preparation and fusion of electrofusion fittings. After proper cooling time has elapsed, new service or main may be pressure tested. The fitting is shipped from the factory with the cutter positioned to allow a high rate of bypass to the outlet for pressure testing. (see Fig. 1)

1) After the pressure testing is completed the tapping tool can be used to bring the cutter to the top of the fitting for proper installation of the no blow-by tapping tool.

2) Thread the retainer nut into the top of the punch. This is an important feature of the tapping tool that prevents the tapping handle from being forced upward when the fitting is pressurized during the tapping process. (see Fig. 2)

3) With the retainer nut installed the cap can be installed and tightened just enough to get a good seal on the o-rings, (hand tighten only).

4) With the tapping tool installed, the handle can be rotated clockwise until the depth stop is against the top of the tool. (see Fig. 3)

5) The handle can now be rotated counterclockwise until the punch is seated firmly on the o-ring in the top of the fitting.

6) With the punch seated against the o-ring, the tapping tool can be removed and the cap can be installed. It is very important to tighten the cap hand tight. The use of wrenches or other tools can permanently damage the fitting.

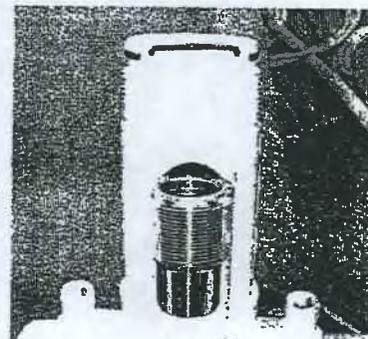
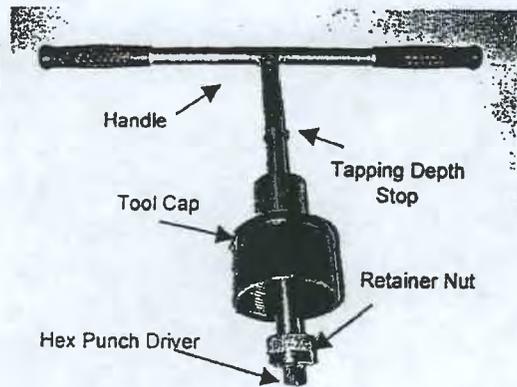


Fig. 1



Fig. 2

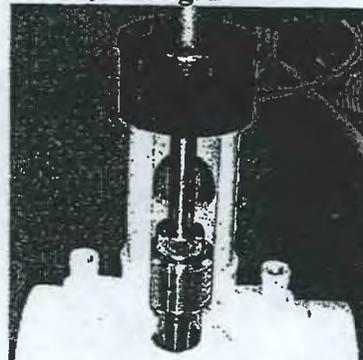


Fig. 3



ISO 9001 Certified

Central Plastics Company
 1901 W. Independence St.
 Shawnee, OK USA 74802-3129
 405-273-6302 or 800-654-3872
 Fax 405-273-5993 or 800-733-5993

Rev 1/2000

EXHIBIT 13

Central Plastics' Revised HVTT Procedures (May, 2001)



Gas SPEC 001

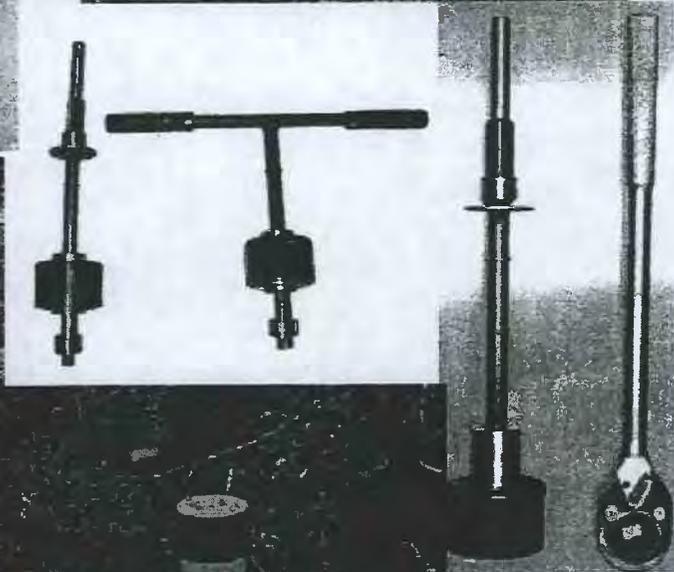
High Volume Tapping Tee No Blow-by Tool

Solves the Problem of Excessive Blow-by

Features:

For Use with Central Plastics High Volume Tapping Tee

- Prevents gas from escaping during tapping operation.
- Compact size allows for use in tight ditch conditions.
- Provides positive stops during tapping to prevent over penetration of the punch.
- Retainer secures the tool even after fitting is pressurized.



Central Plastics Company
1901 W. Independence St.
Shawnee, OK USA 74801
www.centralplastics.com

Phone: 800-654-3872
405-273-6302
Fax: 800-733-5993
405-273-5993

No Blow-By Tool Operation Instructions

The Central Plastics High Volume Tapping Tee should be fused to the pipe using the standard procedures for the preparation and fusion of electrofusion fittings. After proper cooling time has elapsed, new service or main may be pressure tested. The fitting is shipped from the factory with the cutter positioned to allow a high rate of bypass through the outlet for pressure testing. (see Fig.1)

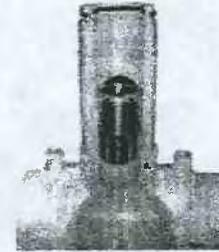


Fig. 1

1) Inspect the sealing surface of the No-Blow Tapping Tool and ensure the O-Ring seal is properly installed and in good condition. (see Fig. 2)

2) After the pressure testing is completed the tapping tool can be used to bring the cutter to the top of the fitting for proper installation of the no blow-by tapping tool.

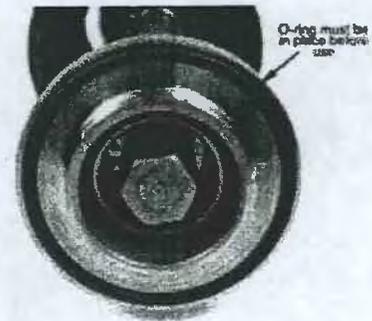


Fig. 2

3) Thread the retainer nut into the top of the punch This is an important feature of the tapping tool that prevents the tapping handle from being forced upward when the fitting is pressurized during the tapping process. (see Fig. 3)

4) With the retainer nut installed the cap can be installed and tightened just enough to get a good seal on the o-rings, (hand tighten only).

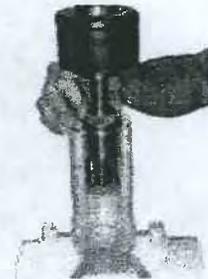


Fig. 3

5) With the tapping tool installed, the T-handle or ratchet handle can be rotated clockwise until the depth stop is against the top of the tool. Retighten the cap after rotating the tapping tool a couple of revolutions. (see Fig. 4)

6) The handle can now be rotated counterclockwise until the punch is seated firmly on the o-ring in the top of the fitting. (NOTE: If at any time you hear gas escaping - tighten the cap)



Fig. 4

7) With the punch seated against the o-ring, the tapping tool can be removed and the cap can be installed. Occasionally there will be a slight deformation of the I.D. o-ring and a small amount of gas leaking around the punch. This is normal and will not prevent the cap from sealing properly. (NOTE: It is very important to tighten the cap hand tight. The use of wrenches or other tools can permanently damage the fitting.)



ISO 9001 CERTIFIED

Central Plastics Company
1901 W. Independence St.
Shawnee, OK USA 74801
www.centralplastics.com

Phone: 800-654-3872
405-273-6302
Fax: 800-733-5993
405-273-5993

EXHIBIT 14

Drug Test Results

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-16: Provide the names and titles of employees and/or contractors who were required to undergo drug or alcohol testing as a result of the incident. Include in your response the results of those alcohol and/or drug tests. Did the Company test every employee and/or contractor present at the scene of the incident or involved in matters related to the incident? If not, please explain.

Drug and alcohol testing following an accident is governed by 49 C.F.R. 199.105 and 49 C.F.R. 225, respectively, which set forth similar requirements following an incident. Specifically, these provisions require the following:

49 C.F.R. 199.105

- (b) Post-accident testing. As soon as possible but no later than 32 hours after an accident, an operator shall drug test each employee *whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident*. An operator may decide not to test under this paragraph but such a decision must be based on the best information available immediately after the accident that the employee's performance could not have contributed to the accident or that, because of the time between that performance and the accident, it is not likely that a drug test would reveal whether the performance was affected by drug use.

49 C.F.R. 199.225

- (a) Post-accident. (1) As soon as practicable following an accident, each operator shall test each surviving covered employee for alcohol *if that employee's performance of a covered function either contributed to the accident or cannot be completely discounted as a contributing factor to the accident*. The decision not to administer a test under this section shall be based on the operator's determination, using the best available information at the time of the determination, that the covered employee's performance could not have contributed to the accident.

The only employee whose performance could possibly have contributed to the occurrence of the event is that of Mr. Arsenault. There was no indication that drug or alcohol use was a contributing factor in the incident. In addition, the Company was unable to obtain a drug test of Mr. Arsenault because he was transported to the hospital immediately following the incident and was medicated before a drug test could be requested or performed.

EXHIBIT 15

Leakage Survey Results

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-6: For five years prior to the Incident, provide the dates and results of leakage surveys of the mains and services underlying Webster Street from Dedham Avenue to Great Plain Avenue; and Harris Avenue from Dedham Avenue to Mayo Avenue, that were conducted by NSTAR.

The initial leak report for the Class 2 leak being repaired at the time of the incident is provided herewith as IR PESD 1-6(a). Under 220 CMR 101.06 (21)(f), the Company is required to maintain leak survey records relating to the most recently completed leak survey in any given area. The most recent leak survey of Webster Street and Harris Avenue area was performed on July 14, 2005, by mobile survey. No leaks were detected. The record of this leak survey is provided herewith at IR PESD 1-6(b).

EXHIBIT 16

Other Leakage Survey Results

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-9: Provide the results of any leakage surveys conducted after the Incident.

As the Company returned each main segment to service following the incident, the segment of main was surveyed to ensure that no leaks were present. The sequence of events relating to the restoration of service is provided herewith as IR PESD 1-9(a). On May 4, 2006, a walking survey was performed to recheck the area of Webster Street and Harris Avenue and no leaks were detected. A copy of the survey results are provided herewith as IR PESD 1-9(b).

EXHIBIT 17

Training Records

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-19: Provide documentation for all NSTAR employees and/or contractors who were working at the Incident site that they were trained in tapping pipelines under pressure.

The NSTAR Gas employees on site on the day of the incident were: Kevin McCusker, Bob Falvey, Kevin Soule and John Arsenault. A schedule listing the training segments and dates is provided herewith as IR PESD 1-19(a). In particular, the schedule shows that John Arsenault completed training on high volume electrofusion tees on March 21, 2000. Training attendance sheets are attached as IR PESD 1-19(b). Outlines of the Pipe Joining and the Cast Iron O&M training are attached as IR PESD 1-19(c) and 1-19(d).

IR PESD 1-19
Attachment (a)
Schedule of Training Events

Summary of Training

	3/14/2000	3/21/2000	1/24/2001	5/16/2001	2/13/2001	3/13/2001	2/20/2002	7/1/2004	11/9/2005	12/14/2005
	Pipe Location Training	High Volume Electrofusion Tees	Annual Plastic Joining Requalification	Initial Joining Qualification (1)	Pipe Location Training	Inspector Training	Pipe Joining	Tools and Equipment	Supply System, Cast Iron O&M	Electrical Safety, Lock Out - Tag Out
Kevin McCusker		x	x		x		x	x	x	
Bob Falvey		x						x	x	x
Kevin Soule				x			x	x	x	
John Arsenaault	x	x	x		x	x		x	x	x
Bill Bowler			x				x	x	x	x
Jerry Lucey		x	x				x	x	x	x

(1) For new employees

IR PESD 1-19
Attachment (b)
Training Attendance Sheets

COM/GAS DISTRIBUTION

**WIDE BODY / HVPT TRAINING
(ELECTROFUSION)**

2000

EXHIBIT 18

Operator Qualification Records

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-20: Provide documentation for all NSTAR employees and/or contractors working at the Incident site that demonstrates that they were in compliance with NSTAR's Operator Qualification Compliance Program. Include copies of the appropriate Covered Tasks.

A schedule listing the dates of Operator Qualification is provided herewith as IR PESD 1-20(a). In particular, the schedule shows that John Arsenault received his Operator Qualification training and testing for tapping pipelines under pressure (Covered Task #37) on 3/30/04, 3/31/04, 4/1/04. The schedule also shows that on 1/13/05 and 01/19/06 John Arsenault received his Qualification for Tasks 49 & 50 respectively. Attached are copies of Covered Tasks #37, #49 and #50 (attached as IR PESD 1-20(b), (c) and (d), respectively).

**IR PESD 1-20
Attachment (a)
Operator Qualification
Records**

Summary of Training Operator Qualification

	12/5/2001 & 12/20/01	1/15/2003	1/21/2004	2/11/2004	1/13/2005	3/30/2004	031/31/04	4/1/2004	2/17/2006
	Pipe Joining (1)	Pipe Joining	Pipe Joining	Pipe Joining	Pipe Joining	Tapping Pipelines under pressure			
Kevin McCusker	x	x	x		x	x	x	x	x
Bob Falvey	x	x		x	x				
Kevin Soule	x	x		x	x				
John Arsenaault	x	x	x		x	x	x	x	
Bill Bowler				x					
Jerry Lucey		x	x		x	x	x	x	x

(1) For new employees



OQ2 RE-EVALUATION INTERVAL ANALYSIS

July 23, 2003

INTRODUCTION: On June 3, 2003 four sub-committees were formed (Written Plan, Distribution, Pressure Regulation, and Corrosion) to review and modify, if necessary, NGA's OQ Program re-evaluation intervals. To ensure a consistent evaluation by all sub-committees, the Written Plan sub-committee reviewed the current re-evaluating interval methodology, compared it to other national methodologies, and from this review updated the NGA re-evaluation interval methodology.

The conclusion of the Written Plan Sub-Committee, after reviewing various methodologies, was three key factors contribute to the determination of the appropriate re-evaluation interval; frequency task is performed by the operator; complexity of the task; and the risk or consequence of performing the task incorrectly. Each of these factors was given a rating (low, medium, high or 0-6 months, 6-12 months, 12 months and over) with a corresponding value (1, 2 or 3). The values for the three factors were multiplied providing an overall value for the task. Overall values of 5 or lower indicate a task requiring re-evaluation every 5 years. Overall values of 6 or greater indicate a task requiring re-evaluation every 3 years. Three (3) years was determined, through the evaluation process, to be the lowest re-evaluation interval required to ensure task qualification. Tasks who's re-evaluation interval is mandated by regulation, for example welding and pipe joining, were not included in this evaluation process.

	Covered Task	Current Interval	Frequency Performed	Complexity	Risk	Overall Value	Interval With-in
1	Inspecting for shorted casings	5 years	0-6 Months	Medium	Low	2	5 years
2	Measuring pipe-to-soil potential	5 years	0-6 Months	Low	Low	1	5 years
3	Conduct a soil resistivity survey	5 years	6-12 Months	Medium	Low	4	5 years
4	Conducting interference testing	3 years	0-6 Months	High	High	9	3 years
5	Electrically checking for proper performance reverse current switches, diodes, and interference bonds	5 years	0-6 Months	Low	High	3	5 years
6	Inspecting for atmospheric corrosion	5 years	0-6 Months	Low	Low	1	5 years
7	Ensure operation of a rectifier	5 years	0-6 Months	Medium	High	6	3 years
8	Inspecting for internal corrosion	5 years	0-6 Months	Low	Low	1	5 years
9							
10	Clear a shorted casing	5 years	12 and over	Low	Low	3	5 years
11	Applying pipe coating in the field for maintenance	5 years	0-6 Months	Low	High	3	5 years
12	Cleaning and coating pipe for atmospheric corrosion	5 years	0-6 Months	Low	Medium	2	5 years
13	Installing/replacing a rectifier on an existing pipeline	5 years	6-12 Months	Medium	High	12	3 years
14	Installing/replacing an anode on an existing line	5 years	0-6 Months	Medium	Low	2	5 years
15	Installing/replacing and testing electrical isolation couplings on an existing pipeline	5 years	0-6 Months	Medium	Low	2	5 years
16	Install/replace a corrosion test station on an existing pipeline	5 years	0-6 Months	Medium	Low	2	5 years
17	Repair coating on an existing steel main	5 years	0-6 Months	Low	High	3	5 years

18	Conducting gas leakage surveys	5 years	0-6 Months	Low	Medium	2	5 years
19	Patrolling and inspecting pipeline	5 years	0-6 Months	Low	Medium	2	5 years
20	Investigating leak/odor complaints	5 years	0-6 Months	Medium	High	6	3 years
21	Line locating and mark out	5 years	0-6 Months	Medium	High	6	3 years
22	Inspection 3 rd party excavations for damage prevention/cast iron encroachment	5 years	0-6 Months	Low	High	3	5 years
23	Inspecting the condition of exposed pipe or pipe coating	5 years	0-6 Months	Low	Low	1	5 years
24	Inspect pipe at a maintenance job for damage	5 years	0-6 Months	Low	Low	1	5 years
25	Repair transmission line leaks	3 years	12 and over Months	High	High	27	3 years
26	Repair and maintain transmission line valves	3 years	6-12 Months	Medium	High	12	3 years
27	Lubricate transmission line valves	3 years	6-12 Months	Low	Low	2	5 years
28	Up-rating	3 years	12 and over Months	High	High	27	3 years
29	Repair distribution line leaks	5 years	0-6 Months	Medium	High	6	3 years
30	Repair a non-leaking damaged pipe	5 years	0-6 Months	Medium	Medium	4	5 years
31							
32	Purging air from pipeline	5 years	0-6 Months	Medium	Medium	4	5 years
33	Purging gas from pipeline	5 years	0-6 Months	Medium	Medium	4	5 years
34	Performing pressure test on existing pipe	5 years	0-6 Months	Low	High	3	5 years
35	Stopping gas flow	5 years	0-6 Months	High	High	9	3 years
36	Abandonment of a gas service line	5 years	0-6 Months	High	High	9	3 years
37	Tapping pipelines under pressure	5 years	0-6 Months	High	High	9	3 years
38	Starting up or shutting down any part of a pipeline that could cause MAOP to be exceeded	3 years	0-6 Months	High	High	9	3 years
39	Remove service tee or fitting from steel or cast iron mains	5 years	0-6 Months	Low	Low	1	5 years
40	Replace a section of existing tracer wire	5 years	0-6 Months	Low	Low	1	5 years
41	Inspect valves	5 years	0-6 Months	Low	Medium	2	5 years
42	Repair and maintain distribution line valves	5 years	0-6 Months	Low	Medium	2	5 years
43	Lubricate distribution line valves	5 years	0-6 Months	Low	Low	1	5 years
44	Repair inline welds	Note 1					Note 1
45	Restore service	5 years	0-6 Months	Medium	Medium	4	5 years
46	Maintaining service and curb boxes	5 years	0-6 Months	Low	Low	1	5 years
47	Abandon a gas service line	5 years	0-6 Months	Low	Low	1	5 years
48	Extend or cut back on an existing service line	5 years	0-6 Months	Low	Low	1	5 years
49	Joining pipe materials other than plastic or steel during maintenance	3 Years					Note 1 Note 2
50	Joining plastic pipe for maintenance	Note 1					Note 1
51	Install bolt-on tee on plastic pipe	Note 1					Note 1 Note 2
52	Inspect plastic pipe fusion joint	Note 1					Note 1
53	Non-destructive testing of maintenance welds	Note 1					Note 1
54	Welding on a pipeline for maintenance	Note 1					Note 1
55	Maintain a pipeline compressor station	3 years	6-12 Months	High	High	18	3 years
56	Operate a pipeline compressor station	3 years	0-6 Months	Medium	High	6	3 years
57	Repair a compressor	3 years	6-12 Months	High	High	27	3 years

58	Maintaining gas detection systems and alarms in compressor stations	3 years	0-6 Months	Medium	High	6	3 years
59	Controlling and monitoring gas pressures and flows	3 years	0-6 Months	Medium	High	6	3 years
60	Operation of remote control valves	3 years	0-6 Months	Low	High	3	5 years
61	Inspect recording gauge	5 years	0-6 Months	Medium	Medium	4	5 years
62	Inspect and test pressure regulator station	3 years	0-6 Months	High	High	9	3 years
63	Testing overpressure protection	3 years	0-6 Months	High	High	9	3 years
64	Inspect telemetering equipment at a pressure limiting or regulator station	5 years	0-6 Months	High	High	9	3 years
65	Bypass a regulator	3 years	0-6 Months	Medium	High	6	3 years
66	Field interpretation of pressure recording charts	5 years	0-6 Months	Medium	High	6	3 years
67	Inspecting a pressure regulator vault	5 years	0-6 Months	Low	Medium	2	5 years
68	Operating an odorizer	5 years	0-6 Months	Medium	High	6	3 years
69	Monitor natural gas odorization levels	5 years	0-6 Months	Low	High	3	5 years

	Non-Covered Task	Current Interval	Frequency Performed	Complexity	Risk	Overall Value	Interval With-in
70	Properties of gas and abnormal operating conditions	3 years	6-12 Months	Medium	High	12	3 years

NOTE 1: 49 CFR Part 192 mandated interval

NOTE 2: Covered per Note 1 (192.283 and .285)

Super for Employee: **John Arsenault [Com 126]**

Update Tasks

Restore Tasks



Show Available Super: Covered & Non-Covered Show Group Tasks: < Select Group > Text Search:

Selected Super [51]

Qualified	Super ID	Super Name	Qualify	Revision	Covered	Remove
10/28/02	NGA-011	Applying pipe coating in the field for maintenance	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-012	Cleaning and either coating pipe for atmospheric corrosion	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-014	Installing/replacing an anode on an existing line	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-015	Installing/replacing and testing electrical isolation couplings on an existing pipeline	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-016	Install/replace a corrosion test station on an existing pipeline	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-017	Repair coating on an existing steel main	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-020	Investigating leak/odor complaints	Qualify	1	Y	<input type="checkbox"/>
03/31/04	NGA-020A	Investigating leak/odor complaints	Qualify	1	Y	<input type="checkbox"/>
04/01/04	NGA-021	Line locating and mark out	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-022	Inspection of 3rd party excavations for damage prevention	Qualify	1	Y	<input type="checkbox"/>
12/18/02	NGA-023	Inspecting the condition of exposed pipe or pipe coating	Qualify	1	Y	<input type="checkbox"/>
12/18/02	NGA-024	Inspect pipe at a maintenance job for damage	Qualify	1	Y	<input type="checkbox"/>
03/31/04	NGA-026	Repair and maintain transmission line valves	Qualify	1	Y	<input type="checkbox"/>
03/31/04	NGA-027	Lubricate transmission line valves	Qualify	1	Y	<input type="checkbox"/>
03/31/04	NGA-029	Repair and distribution line leaks	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-030	Repair a non-leaking damaged pipe	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-032	Purging air from pipeline	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-033	Purging gas from pipeline	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-034	Performing pressure test on existing pipe	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-035	Stopping gas flow	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-036	Abandonment or Deactivation of Facilities	Qualify	1	Y	<input type="checkbox"/>
04/01/04	NGA-037	Tapping pipelines under pressure	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-039	Remove service tee or fitting from steel or cast iron mains	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-040	Replace a section of existing tracer wire	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-041	Inspect valves	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-042	Repair and maintain distribution line valves	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-043	Lubricate distribution line valves	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-045	Restore service		1	Y	

			Qualify			<input type="checkbox"/>
10/28/02	NGA-046	Maintaining service and curb boxes	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-047	Abandon a gas service line	Qualify	1	Y	<input type="checkbox"/>
10/28/02	NGA-048	Extend or cut back on an existing service line	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-049	Joining pipe materials other than plastic or steel during maintenance	Qualify	1	Y	<input type="checkbox"/>
01/13/05	NGA-050	Joining plastic pipe for maintenance	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-050 Demo	Joining plastic pipe for maintenance	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-050 Written	Joining plastic pipe for maintenance	Qualify	1	Y	<input type="checkbox"/>
01/13/05	NGA-051	Install bolt-on tee on plastic pipe	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-051 Demo	Install bolt-on tee on plastic pipe	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-051 Written	Install bolt-on tee on plastic pipe	Qualify	1	Y	<input type="checkbox"/>
01/13/05	NGA-052	Inspect plastic pipe fusion joint - maintenance	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-052 Demo	Inspect plastic pipe fusion joint - maintenance.	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-052 Written	Inspect plastic pipe fusion joint - maintenance	Qualify	1	Y	<input type="checkbox"/>
03/31/04	NGA-070	Abnormal Operating Conditions /Properties of Natural Gas	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-01	Butt Fusion	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-02	Socket Fusion	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-04	Electro Fusion - Saddle	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-05	Electro Fusion - Coupling	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-06	Mechanical Coupling - Bolt On	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-07	Mechanical Coupling - Stab	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-08	Mechanical Coupling - Compression	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-09	Mechanical Coupling - Thread	Qualify	1	Y	<input type="checkbox"/>
01/19/06	NGA-PJQ-10	Soil Compaction	Qualify	1	Y	<input type="checkbox"/>

Available Super [69]

Super ID	Super Name	Revision	Covered	<input type="checkbox"/> Select
NGA-001	Inspecting for shorted casings	1	Y	<input type="checkbox"/>
NGA-002	Measuring pipe-to-soil potential	1	Y	<input type="checkbox"/>
NGA-003	Conduct a soil resistivity survey	1	Y	<input type="checkbox"/>
NGA-004	Conducting interference testing	1	Y	<input type="checkbox"/>
NGA-005	Electrically checking for proper performance reverse current	1	Y	<input type="checkbox"/>

Student Training Summary

John Arsenault

Person ID: 999901

Session	Status	Course	Title	Session #	Start Date	End Date
T1255		Review of BB Pathogens-Gas		0037	03/21/2006	03/21/2006
T1262		PPE -Gas		0041	03/21/2006	03/21/2006
T1246		Backfill&CompactionProtocol		0016	01/19/2006	01/19/2006
T1336		Task 49-Gas		0028	01/19/2006	01/19/2006
T1337		Task 50-Gas		0028	01/19/2006	01/19/2006
T1338		Task 51-Gas		0028	01/19/2006	01/19/2006
T1339		Task 52-Gas		0028	01/19/2006	01/19/2006
T1261		Lock Out Tag Out-Gas		0026	12/14/2005	12/14/2005
T1272		Electrical Safety for Gas		0015	12/14/2005	12/14/2005
T1516		Haz Mat Training for Gas		0004	12/14/2005	12/14/2005
T1238		Air Supplied System-Gas		0018	11/08/2005	11/08/2005
T1239		Cast Iron Oper & Maint		0011	11/08/2005	11/08/2005
T1282		CPR/AED		0161	09/28/2005	09/28/2005
T1256		Ladder Safety-Gas		0027	08/14/2005	08/14/2005
T1257		Respiratory Protection Gas		0011	08/14/2005	08/14/2005
T1265		Emergency Action Plan Gas		0034	08/14/2005	08/14/2005
T1263		Fire Safety & Exting-Gas		0036	08/21/2005	08/21/2005
T1219		New Equip Transportation		0044	03/22/2005	03/22/2005
T1246		Backfill&CompactionProtocol		0007	01/13/2006	01/13/2006
T1336		Task 49-Gas		0019	01/13/2005	01/13/2005
T1337		Task 50-Gas		0019	01/13/2005	01/13/2005
T1338		Task 51-Gas		0019	01/13/2005	01/13/2005
T1339		Task 52-Gas		0019	01/13/2005	01/13/2005
T1261		Lock Out Tag Out-Gas		0019	12/08/2004	12/08/2004
T1262		WABE Safety Program		0197	12/08/2004	12/08/2004
T1294		New Tool & Fitting Gas		0013	11/24/2004	11/24/2004
T1282		CPR/AED		0051	09/30/2004	09/30/2004

Customize | Find | View | 1-40 of 80 | First | Last

T1256	Ladder Safety-Gas	0023	09/09/2004	09/09/2004
T1257	Respiratory Protection Gas	0007	09/09/2004	09/09/2004
T1285	Emergency Action Plan Gas	0030	09/09/2004	09/09/2004
T1283	ICARE Safety Program	0207	09/09/2004	09/09/2004
T1294	New Tool & Filing Gas	0007	07/01/2004	07/01/2004
T1263	Fire Safety & Exding-Gas	0015	06/03/2004	06/03/2004
T1283	ICARE Safety Program	0071	06/03/2004	06/03/2004
T1315	Task 20A-Gas	0004	04/01/2004	04/01/2004
T1317	Task 21-Gas	0004	04/01/2004	04/01/2004
T1320	Task 25-Gas	0004	04/01/2004	04/01/2004
T1321	Task 26&27-Gas	0004	04/01/2004	04/01/2004
T1322	Task 28-Gas	0004	04/01/2004	04/01/2004
T1323	Task 29 Gas	0004	04/01/2004	04/01/2004
T1326	Task 35,36 & 39-Gas	0004	04/01/2004	04/01/2004
T1327	Task 37-Gas	0004	04/01/2004	04/01/2004
T1328	Task 38-Gas	0004	04/01/2004	04/01/2004
T1354	Task 70-Gas	0004	04/01/2004	04/01/2004
T1315	Task 20A-Gas	0005	03/31/2004	03/31/2004
T1317	Task 21-Gas	0005	03/31/2004	03/31/2004
T1320	Task 25-Gas	0005	03/31/2004	03/31/2004
T1321	Task 26&27-Gas	0005	03/31/2004	03/31/2004
T1322	Task 28-Gas	0005	03/31/2004	03/31/2004
T1323	Task 29 Gas	0005	03/31/2004	03/31/2004
T1326	Task 35,36 & 39-Gas	0005	03/31/2004	03/31/2004
T1327	Task 37-Gas	0005	03/31/2004	03/31/2004
T1328	Task 38-Gas	0005	03/31/2004	03/31/2004
T1351	Task 70 Gas	0005	03/31/2004	03/31/2004
T1315	Task 20A-Gas	0006	03/30/2004	03/30/2004
T1317	Task 21-Gas	0006	03/30/2004	03/30/2004
T1320	Task 25-Gas	0006	03/30/2004	03/30/2004
T1321	Task 26&27-Gas	0006	03/30/2004	03/30/2004
T1322	Task 28-Gas	0006	03/30/2004	03/30/2004
T1323	Task 29 Gas	0006	03/30/2004	03/30/2004
T1326	Task 35,36 & 39-Gas	0006	03/30/2004	03/30/2004
T1327	Task 37-Gas	0006	03/30/2004	03/30/2004
T1328	Task 38-Gas	0006	03/30/2004	03/30/2004

T1354	Task 70-Gas	0008	03/30/2004	03/30/2004
T1262	PPE -Gas	0012	03/23/2004	03/23/2004
T1241	Haz Com for Gas Training	0018	03/18/2004	03/18/2004
T1255	Review of BB Pathogens-Gas	0015	03/18/2004	03/18/2004
T1283	ICARE Safety Program	0032	03/18/2004	03/18/2004
T1336	Task 49-Gas	0007	01/21/2004	01/21/2004
T1337	Task 50-Gas	0007	01/21/2004	01/21/2004
T1338	Task 51-Gas	0007	01/21/2004	01/21/2004
T1339	Task 52-Gas	0007	01/21/2004	01/21/2004
T1206	Reasonable Sus D&A Testing	0015	10/15/2003	10/15/2003
T1206	Reasonable Sus D&A Testing	0018	10/15/2003	10/15/2003
T4053	Cpr/First Aid	0061	10/03/2003	10/03/2003
T1256	Ladder Safety-Gas	0008	08/23/2003	08/23/2003
T1285	Emergency Action Plan Gas	0008	08/23/2003	08/23/2003
T1263	Fire Safety & Exting-Gas	0009	06/12/2003	06/12/2003
T1221	Gas TDWilliamson Hot Tap	0002	03/19/2003	03/19/2003
T1212	Plastic Pipe Joining Qualifica	0004	01/15/2003	01/15/2003

[Return to Search](#)

ATTENDANCE SHEET

OPERATOR QUALIFICATION TRAINING

Area: CAMB/ DEDHAM / SOMERVILLE Date: 12-20-01 Instructors: ZUSCHLAG

PRINTED NAME:	SIGNATURE:	AREA:	I.D. NUMBER:
<i>[Signature]</i>	LEVIN C. SALE	23 DEDHAM	8711
ED FLETCHER	Edmund Fletcher	22/SOM	3072
Joe McShella	<i>[Signature]</i>	21315 Som	6199
ERROL EBANKS	Errol Ebanks	34315	2691
MICHAEL FULTON	Michael W. Fulton	23/DED	3302
PAUL ROSOUBERGER	Paul Rosoberger	314315-	8011
MICHAEL SMITH	Michael Smith	22	
MARK C. RICE	Mark Rice	22	1970
STEVEN B. DAVIS	Steven B. Davis	22/SOM	2137
JIM CASIM	<i>[Signature]</i>	22	1318
Dan Caulfield	Paul Caulfield	22	
STEVEN A. BUTLER	Steven A. Butler	34320	1074
DAVID COTTER	David Cotter	22	1789
Robert Falvey	Robert Falvey	23	8133
John Gibbons	John M. Gibbons	23	3553

Form

TRAINING PARTICIPATION FORM

Class Name **PIPE JOINING OPERATOR QULIFICATION**

Class # _____
 Start Date & Time **1/15/03 8:30 am**
 End Date & Time **1/15/03 1:30 am**
 Total Contact Hours **5**
 Class Category * **GAS**
 Vendor Code **ED**
 Class Location ** **DEDHAM**
 Minimum Class Size _____
 Maximum Class Size _____
 Instructor(s) **009995**
 (By Emp. #) _____

PLEASE PRINT CLEARLY
 NAME 6 DIGIT EMP. #

District ***	Name	6 Digit Emp. #
Dedham	Brian McCusker	0010174
DED	JOSE CASILLA	0066019
Dedham	DEAN MORGAN	0064790
"	Joe Spangley	0015111
"	Bill Thomas	0021389
"	KEVIN C. SOWE	0087711
SOM	Jim McEleaney	0060445
SOM	John Martin	2691
SOM	ERROL EBANKS	8133
DED	ROBERT FA LVEY	
DED	John A. Assenault	119901
"	Jeremiah F. Lucey III	005575

- * C&C = Cable & Conduit
- DIS = Dispatcher
- EXT = External Trainees
- MTR = Meter
- OVH = Overhead
- GRG = Truck Training
- REG = Compliance
- SPL = Splicing
- SUB = Substation
- SYS = Systems-Computer
- SRP = Storm Rest. Plan
- GAS = Gas Training
- ** 01 = Field
- *** 02 = Framingham
- 03 = Mass. Ave.
- 04 = Somerville
- 05 = Walpole
- 06 = Waltham
- 07 = Worcester
- 08 = Dedham
- 09 = Wareham
- 10 = Yarmouth
- 11 = Plymouth
- 12 = New Bedford
- 13 = Southboro
- 14 = Westwood
- 15 = Vineyard
- 16 = Cambridge

No Show/Cancelled Class: Fram MA Som Walp Wal Wor Ded War Yar Ply NB Sou
 WW Vine Cam

TECHNICAL TRAINING DEPARTMENT
TRAINING PARTICIPATION FORM

Class **PIPE JOINING**

T1336, T1337

Class # **T1338, T1339**

21

Start Date Time **1/14/04 8:30 am**

21

End Date Time **1/14/04 2:30 pm**

Total Contact Hours **6**

Class Category * **GAS**

Vendor Code **ED**

Class Location **HYDE PARK**

Minimum Class Size **6**

Maximum Class Size **6**

NEA CLIFF LOCKE

Instructor(s) **WITOLD ZUSCHLAG**

(By Emp. #) **009995**

PLEASE PRINT CLEARLY

DISTRICT *** NAME 6 DIGIT EMP. #

H.P. **Kevin T McCusker** **006019**

Dedham **MICHAEL FULTON** **003302**

HYDE PARK **Jerry Lucey** **005575**

H.P. **JOHN F. ABRAMOWICZ** ***999901**

H.P. **EDWARD FLETCHER** **3072**

H.P. **JOSE M. CASILLAS** **1289**

- * C&C = Cable & Conduit
- DIS = Dispatcher
- EXT = External Trainees
- MTR = Meter
- OVH = Overhead
- GRG = Truck Training
- ** 01 = Field
- *** 02 = Framingham
- 03 = Mass. Ave.
- 04 = Somerville
- 05 = Walpole
- 06 = Waltham
- 07 = Worcester
- REG = Compliance
- SPL = Splicing
- SUB = Substation
- SYS = Systems-Computer
- SRP = Storm Rest. Plan
- GAS = Gas Training
- 08 = Dedham
- 09 = Wareham
- 10 = Yarmouth
- 11 = Plymouth
- 12 = New Bedford
- 13 = Southboro
- 14 = Westwood
- 15 = Vineyard
- 16 = Cambridge

No Show/Canceled Class: Fram MA Som Walp Wal Ded War Yar Ply NB Sou
WW Vine Cam

**NST. GAS
TECHNICAL TRAINING DEPARTMENT
TRAINING PARTICIPATION FORM**

Class **O. Q. PIPE JOINING**
 Class # T1336 T1337, T1338, T1339
 Start Date Time 2/11/04 8:30 am
 End Date Time 2/11/04 2:30 pm
 Total Contact Hours 6
 Class Category * GAS
 Vendor Code ED
 Class Location HYDE PARK
 Minimum Class Size _____
 Maximum Class Size _____
 Instructor(s) _____
 (By Emp. #) 009995

PLEASE PRINT CLEARLY

DISTRICT ***	NAME	6 DIGIT EMP. #
Som	John Martin	5898
SOUTHBORO	William Gorman	3704
SOUTH BORO	Edward Donovan	2459
HYDE PARK	Jose M. Casillas	1299
HYDE PARK	DEAN MOYAN	006490
Som/Hyp	Kevin Kelley	004902
HYDE PARK	ROBERT FAHEY	8133
HYDE PARK	KEVIN C. SAULS	8711
HYDE PARK	Mike Burns	1053
HYDE PARK	WILLIAM BOWLER	000782

* C&C = Cable & Conduit
 DIS = Dispatcher
 EXT = External Trainees
 MTR = Meter
 OVH = Overhead
 GRG = Truck Training

REG = Compliance
 SPL = Splicing
 SUB = Substation
 SYS = Systems-Computer
 SRP = Storm Rest. Plan
 GAS = Gas Training

** 01 = Field
 *** 02 = Framingham
 03 = Mass. Ave.
 04 = Somerville
 05 = Walpole
 06 = Waltham
 07 = Worcester

08 = Dedham
 09 = Wareham
 10 = Yarmouth
 11 = Plymouth
 12 = New Bedford
 13 = Southboro
 14 = Westwood
 15 = Vineyard
 16 = Cambridge

No Show/Canceled Class: Fram _____ MA _____ Som _____ Walp _____ Wal _____ Wor _____ Ded _____ War _____ Yar _____ Ply _____ NB _____ Sou _____
 WW _____ Vine _____ Cam _____

PLEASE PRINT CLEARLY

DATE: 3-30-04

TASK NO. 20, 21, 26+27, 29, 35+36+39, 37, 70

DISTRICT	NAME	IMMEDIATE SUPERVISOR	6 DIGIT EMP #
SOMERVILLE	STEVE DAVIS	K. KELLEY	2137
"	MIKE O'REGAN	"	7017
	JIM CASLIN	"	1318
"	Phil Derrick	"	2257
HIDE PARK	JOHN F. ABRAMOWITZ	"	999901
Hyde Park	MIKE BURNS	" "	001053
H.P.	Kevin T. McEusker	"	006019
H.P.	Jerry Lucey	"	005575

PLEASE PRINT CLEARLY

DATE: 3-31-04

ASK NO. 20, 21, 29, 35-36-39, 37, 70, 26-27

DISTRICT	NAME	IMMEDIATE SUPERVISOR	6 DIGIT EMP #
Hyde Park	MIKE BURNS	ED FLETCHER	001053
H.P.	KEVIN McCusker	"	006219
SOMERVILLE	STEVE DAVIS	K. KELLEY	002137
SOMERVILLE	Phil Detrick	"	002257
H.P.	Jerry Lucey	"	005575
Som	MIKE O'REGAN	"	007017
Som	JIM CRASLIN	"	001318
H. Park	JOHN F. ROSENBERG	K. K	99990 ⁹⁹⁹⁹⁰¹

EXHIBIT 19

Odor Tests

NSTAR Gas Company
Responses to First Set of Information Requests from the
Pipeline Engineering and Safety Division
Filed: June 26, 2006

IR PESD 1-8: Provide the odorant level readings taken on Webster Street and Harris Avenue prior to and after the incident.

Attached are the odorant-level readings prepared by the Supervisor of Gas Supply for the Manager of Gas Supply following the incident. There are no odorant readings available prior to the incident. The attached report lists the type of equipment used to detect the odorant level, the date the equipment was calibrated and locations of the testing. The result indicated that odorant levels were within the appropriate range in all cases.

**IR PESD 1-8
Attachment
Odor Readings**



To: Mark Gunsalus
From: Scott Laplante
Date: June 13, 2006
Subject: Odor samples from Needham incident

Mark:

Here are the results from the odor samples taken following the April 28, 2006 incident in Needham

<u>Time</u>	<u>Location of sample</u>	<u>Technicians</u>	
		<u>Waldron</u>	<u>Piper</u>
1625	793 Great Plain Ave.	.080/.090	.060/.090
1658	786 Webster St.	.080/.090	.050/.080
1725	929 Webster St.	.080/.090	.080/.110
1745	938 Webster St.	.080/.090	.070/.090
1815	865 Central St.	.050/.060	.090/.120

Testing Equipment information:

Baccarach TG0513, calibrated 3/3/06
Baccarach TG0489, calibrated 4/17/06

cc:
Bill McCabe
Dave Ward