

**MANITOBA**                      **Order No. 10/06**  
**THE PUBLIC UTILITIES BOARD ACT**      **January 24, 2006**

Before:              Graham F.J. Lane, B. A., C.A., Chairman  
                         Monica Girouard, C.G.A., Member  
                         Mario J. Santos, B.A., LL.B., Member

**AN ORDER EXTENDING THE TIME FOR CENTRA GAS MANITOBA INC. TO  
COMPLY WITH BOARD DIRECTIVES IN ORDER 103/05 ON SAFETY ISSUES AND  
COST OPTIMIZATION OF FOUR PARTY TRENCH INSTALLATIONS**

**TABLE OF CONTENTS**

	<b>Page</b>
<b>1.0 EXECUTIVE SUMMARY.....</b>	<b>1</b>
<b>2.0 BACKGROUND .....</b>	<b>1</b>
<b>3.0 CENTRA'S REQUEST .....</b>	<b>3</b>
<b>4.0 SAFETY .....</b>	<b>3</b>
<b>5.0 COSTS .....</b>	<b>5</b>
<b>6.0 BOARD FINDINGS .....</b>	<b>6</b>
<b>7.0 IT IS THEREFORE ORDERED THAT .....</b>	<b>11</b>

## **1.0 EXECUTIVE SUMMARY**

By this Order, the Board extends approval for Centra Gas Manitoba Inc.'s (Centra) testing and optimizing of the installation of natural gas mains in common trenches with electrical, telephone and television cables (Four Party Trench). The extension is granted to August 31, 2006, or such earlier time as the Board may approve Four Party Trench as a regular construction methodology.

In Order 103/05, tentative approval was given to Centra to continue with its Four Party Trench installations until December 31, 2005. By that date, Centra was to demonstrate the financial benefits of the Four Party Trench initiative and assure the Board as to the safety of the approach. Centra was unable to meet this requirement by December 31, 2005.

The Board's extension of time for Centra to comply with Board directives is conditional upon Centra complying with a number of requirements set out herein.

## **2.0 BACKGROUND**

In Centra's recent General Rate Application (GRA), which gave rise to The Public Utilities Board (Board) Orders 103/05 and 135/05, Centra explained that it had embarked on a pilot construction program. Centra's natural gas mains would be installed in a common trench with electrical, telephone and television cables (Four Party Trench).

The impetus for Centra to conduct its pilot project on the Four Party Trench was the expectation that there would be financial savings of approximately 20% to 25% over both the electrical and gas single party installation costs, and safety would not be compromised.

However, at the time of the GRA, the Four Party Trench concept was in its infancy and the direct costs of the Four Party Trench installation project examined in detail at the GRA was 80% to 100% greater than the costs of installation using the conventional single party method.

At that time the Board's understanding was that Centra and its parent company Manitoba Hydro (MH) were then conducting an optimization process with the goal of eventually achieving cost savings of approximately 20% to 25% over the costs of conventional installation. By the end of the 2005 construction season more than 40 Four Party Trench installations were forecast to be completed, providing Centra a sufficient opportunity to optimize the costs of its pilot program and assess overall efficacy, based on actual costs incurred.

In Orders 103/05 and 135/05, tentative approval was given to Centra to continue with its Four Party Trench installations until December 31, 2005. By that date, Centra was to demonstrate the financial benefits of the Four Party Trench initiative and assure the Board as to the safety of the approach.

In Order 103/05, the Board directed:

“Centra cease all gas pipe line installations using the four party trench method as of December 31, 2005, unless and until Centra can satisfy the Board that anticipated savings can be realized and that there is no greater risk to public safety.”

In Order 135/05, the Board directed:

“Centra complete its research on four party trenches and submit a study with final conclusions by December 31, 2005.”

### **3.0 CENTRA'S REQUEST**

On December 16, 2005 Centra filed with the Board a Report on Four Party Trench installation, in which:

“Centra concludes that the 4-Party Concept should enhance safety by reducing the risk of damage to the gas mains and services and once the 4-Party Concept is optimized, the costs of 4-Party installations will be equal to and in some cases as much as 20% less than that of a conventional installation, depending on the layout of the installation.”

Based on the above conclusions, Centra requested the Board immediately rescind its directives in Order 103/05 for Centra to cease all gas installations using the Four Party Trench method as of December 31, 2005. Centra requested approval to proceed with the process of optimizing the Four Party Trench design.

The Board has considered the use of Four Party Trench installations from the perspective of both safety and costs.

### **4.0 SAFETY**

In Order 103/05, the Board encouraged Centra to place safety issues before financial consideration and reminded Centra that the Utility continues to bear the prime responsibility for the installation, maintenance and operations of its plant in a manner so as to ensure public safety.

In respect of the safety aspects of the Four Party Trench, Centra concludes and urges the Board to accept that the Four Party design concept should enhance safety by

reducing the risk of damage frequency to the gas mains and services. Centra submits safety is directly associated with damage to the pipe line and the release of natural gas.

Centra concluded that, with gas main damage reduced, the safety of both the public and construction workers are enhanced. Centra submits that the enhanced safety benefits from using Four Party Trench include:

- reduced future damage to gas mains by using an open trench where adequate depth and separation between the gas line and electric and communication lines can be visually verified;
- the placement of the Four Party Trench on easements on private property rather than on public rights of way;
- reduced risk of damage to the plant of the other utilities because all four are being installed together; the Four Party concept also avoids having to work around another utility's energized plant, making it safer for workers
- the extension of all four utility service stubs further onto the customer's lot for future connection to the customer's building, this to reduce the need for future excavation utility around the gas main or electrical cables;
- the use of wooden chute boxes over the end of the service line stubs, before it is back filled, to minimize the potential for damage to the service stub during excavation to extend a service line to a customer;
- installation of Four Party Trench on both sides of the road eliminating long service lines under roadways and thereby reducing the potential for damage when excavation within the street occurs, such as with road rebuilding or with sewer and water pipe repair or removal;

- a projected 65% reduction in the number of damages based on an examination of past damages in conventional installations and forecasting the likely effects of using a Four Party Trench in such installations;
- the gas main being a consistent distance apart from the electrical and communication cables, such that line locators are provided with an additional level of verification as to where the underground plant is located; and
- reduced damages related to digging; homeowner fence construction, while not common in the front yard, is typically installed on the side lot lines, not on the alignment of the Four Party main trench; further, should an excavator fail to observe the “Call Before You Dig Program”, contacting both gas and electrical lines simultaneously is unlikely given the required separation of services (300 mm) and mains (400 mm) in the trench, because the usual drilling equipment used to install fence posts is between 150 mm and 300 mm in size.

In support of its contention that safety will be enhanced by the use of the Four Party Trench for gas mains, Centra advises that it has been using a Four Party Trench for its gas service lines since the mid-1990's. Centra reported that this installation methodology has eliminated the damages caused by one Utility to another Utility's plant while installing subsequent shallow services.

Additionally, in support its claim of expected safety enhancements with Four Party Trench, Centra notes that Four Party Trench installations in other Canadian jurisdictions using similar installation standards have been successful.

## **5.0 COSTS**

As for the issue of costs, Centra concludes that once the Four Party Trench concept is optimized, the costs for such installations will be equal to and in some cases as much as

20% less than that of conventional installations, depending on the layout of the installation.

Centra reminds the Board that the higher costs of the project using the Four Party Trench methodology, as examined at the last GRA, reflected the fact that Centra and MH had yet to organize, train and equip its construction forces to obtain an optimized installation cost.

Centra's process improvement project, looking at the optimization of Four Party Trench installations, concluded most cost saving opportunities rests with the integration and coordination of similar gas and electrical tasks. The integration of tasks, by a Centra/MH construction crew, is expected to result in process efficiencies, cost savings and improved customer service.

## **6.0 BOARD FINDINGS**

### **SAFETY**

Centra recognizes it carries prime responsibility for the installation, maintenance and operation of its plant in a manner so as to ensure public safety. When MH purchased the shares of Centra, it was on the condition that it would not compromise safe and reliable natural gas service. At the most recent GRA, Centra once again confirmed that safety has not been compromised.

Indeed, a major premise of Centra proceeding with Four Party Trench installations for gas mains, is that safety will be enhanced, not reduced.

Based on Centra's evidence, the Board finds that the Four Party Trench methodology is not of greater risk than the conventional method of installation. Both the Four Party Trench and the conventional method of installation introduce risk and require proper standards and procedures to be followed to minimize risks. To demonstrate it has



proper standards and procedures covering all aspects of design and installation, Centra is to file copies with the Board and confirm that such proper standards and procedures are always followed on all Four Party Trench installations.

At this time, and based on Centra's evidence, the Board is able to conclude that Four Party Trench is as safe as conventional installations. However, because of insufficient local experience, the Board is unable to conclude that Four Party Trench installation is safer than conventional installation. While Centra's damage analysis, which employs historic information on conventional applications, forecasts fewer damages in Four Party Trench installations, such analysis is but a forecast; only experience will suffice as conclusive evidence.

To provide current data, related to damages to Four Party Trench installed plant, Centra will be required to track and detail any such damage and include this information in a Monthly Damage Summary Report to the Board's Advisors.

One safety aspect is Centra's desire to avoid excavation around the plant in the Four Party Trench when the deep services of sewer and water are extended. A potential safety issue arises when the excavation is done to extend the sewer and water services to the house. To safely excavate to the depths of the sewer and water stubs, which presently are terminated a distance of 1.75 meters beyond the gas main and at a depth of approximately 2.5 meters, the gas plant in the Four Party Trench will need to be exposed to determine its exact position and depth in compliance with section 9 of Excavation Regulation #140/92.

Centra should conduct a review to determine whether the sewer and water stub length could be extended to mitigate the risk of damaging the gas line. Centra should also work with developers to ensure that all deep services (sewer and water) are installed prior to the installation of shallow services (gas, telephone, cable tv and electricity).

For an excavation near a Four Party Trench, such as the sewer and water tie-in excavation, Centra should provide the excavation procedures to be used by sewer and

water tie-in-crews. A copy of such procedures should be provided to the Board. Centra should also provide the Board with the specifications for the sewer and water stub length in a Four Party Trench layout.

Because the Four Party Trench installation is intended to take place on the homeowner's private property, with the utilities having access to a corridor by way of an easement agreement, it is important that the homeowner be educated as to the existence of the Four Party Trench on the homeowner's property. Centra will be required to develop, and file with the Board, a homeowners' awareness and education program specific to the existence of the Four Party Trench on the homeowners property. This should include a drawing or diagram and description of the easement, including a description of any easement restrictions for the homeowner's review.

Because research and new technology may lead to safety improvements, Centra will be required to inform the Board on a continuous basis of any changes made or contemplated to enhance the safety of Centra's installations, operations and maintenance of its plant. Such notification extends to any change in the location of the Four Party Trench.

Written reporting should take place at Quarterly Safety Meetings with Centra, Board Staff and Advisors. Through such meetings the Board will be made aware of and be able to asses new developments, at the earliest possible time.

## **COSTS**

The Board is disappointed that Centra has yet to optimize the costs of Four Party Trench installations. From the GRA, the Board was of the understanding that Centra was in the process of conducting an optimization process to achieve savings of approximately 25% over gas single party installation costs. The Board was of the further understanding that Centra committed to evaluating the merits of the Four Party Trench pilot project by the end of 2005.

Following the last GRA and by the end of 2005, approximately 40 Four Party Trench installations were to have been completed, allowing Centra sufficient opportunity to properly assess the pilot project and fully demonstrate financial or other tangible benefits. Those expectations have not materialized, as the optimization process has yet to be introduced. This continues the Board's concerns about costs – both of the optimization process in general and of the Four Party Trench projects completed or planned to be completed soon.

The Board now understands that to proceed with the optimization process Centra will be required to incur additional capital and operating costs. Because the specific detail of such costs has not been provided to the Board, Centra will be required to file such detail immediately and await approval from the Board before proceeding further with the optimization plan. Centra should include the specifics of all costs associated with its optimization plan (capital expenditure details, additional personnel and training details, operating costs details), as well as an explanation as to how such costs have been factored into the feasibility tests for main extensions. After receiving and reviewing the detailed costs, the Board will advise Centra as to whether it may continue with its optimization process.

Because Centra has not satisfied the directives of the Board from Order 103/05, the Board is not prepared to rescind them, as was requested by Centra.

Rather, provided the Board, after reviewing the details of the costs, authorizes Centra to proceed with the implementation of the optimization process as outlined above. Centra will be granted an extension of time until August 31, 2006 to satisfy the Board's directives in Order 103/05, and those contained in this Order.

To assist Centra in satisfying the directives, Centra is to track the costs of three test case projects -- one with more than 100 residential lots, one with between 50 – 100 residential lots, and one with fewer than 50 residential lots. Centra is to compare the

actual costs of fully optimized and completed Four Party Trench installations with the costs that would have been incurred if installations had been done conventionally.

Centra may wish to consider whether tendering one or more Four Party Trench installation projects to a private contractor would assist in providing comparative costing information for the Board.

By now, Centra has completed in the order of 75 projects using Four Party Trench installations for gas mains, and likely has committed to another 30 such projects. Centra has urged the Board not to consider the cost of all those Four Party Trench projects as being 80 – 100% greater than conventional installation costs, as suggested in the case study at the last GRA. Centra submits that the costs examined at the GRA were not based on efficient or comparable installation processes.

Therefore, in order, to compare what would have been the costs had conventional installation be utilized, Centra is to calculate and provide the Board with the detailed total costs of the Four Party Trench main program, from the initial installation to July 31, 2006.

## **CONTINGENCY PLAN**

Centra's December 15, 2005 Report did not contain any contingency plan in the event that Centra was unable to satisfy the Board that anticipated savings would be realized and that there was no greater risk to public safety by using the Four Party Trench methodology. The lack of a contingency plan resulted in an untenable situation where projects would be delayed if Centra was unable to proceed with installations for its customers upon a denial of the Board's approval.

The lack of a contingency plan by Centra and the lack of full compliance with Board directives in Order 103/05 has resulted in additional time and expense being incurred to

investigate and deliberate Centra's current request. Such additional costs are borne by the consumer, for whom the Four Party Trench was to yield cost savings.

The Board provided the contingency plan in Order 103/05. Centra was to cease all gas pipe line installations through the Four Party Trench program as of December 31, 2005, and thereafter carry on using the traditional means of gas main installation.

Centra will be required to submit their supporting evidence for the Four Party Trench Concept for approval on or before August 31, 2006. Allowing for the potential that approval may not be granted, Centra is to have available for immediate implementation, alternate construction plans, using the conventional method of gas main installations, for projects to be constructed after June 30, 2006. If the Board is not satisfied that its conditions related to the Four Party Trench in Order 103/05 and this Order have been met, Centra is to return to conventional trenching, immediately upon Board notification.

#### **7.0 IT IS THEREFORE ORDERED THAT:**

1. The time in which Centra is to satisfy the Board's directives, with respect to Four Party Trench installation for gas mains, as contained in Order 103/05, BE AND IS HEREBY EXTENDED TO AUGUST 31, 2006;
2. Centra immediately file with the Board, the current standards and procedures covering all aspects of design and installation of the Four Party Trench method and confirm that such standards and procedures are always followed on all Four Party Trench installations;
3. Centra track and detail any damages to Four Party Trench installed plant, and include this information in its Monthly Damage Summary Report to the Board;

4. Centra provide the Board with copies of any agreements with developers that specify the minimum stub lengths and excavation practices for water and sewer services, together with a report as to whether sewer and water stub lengths should be extended to mitigate the risk of damaging the gas line;
5. Centra review and report to the Board the procedures available to ensure, to the extent possible, that sewer and water services are installed prior to the installation of the shallow services;
6. Centra develop and file with the Board, homeowners' awareness and education programs specific to the existence of the Four Party Trench on the homeowner's property. Centra should include a drawing or diagram and description of the easement, the location of the Four Party Trench and an explanation of any easement restrictions;
7. Centra inform the Board on a continuous basis, of any changes made, or being contemplated, to enhance the safety of Centra's installations, operations and maintenance of its plant. Such written reporting should take place at Quarterly Safety Meetings among Centra, Board Staff and Advisors;
8. Centra immediately file, for Board review and approval, the specific details of all costs associated with its optimization plan (capital expenditure details, additional personnel and training details, operating costs details) together with an explanation as to how such costs have been factored into the feasibility tests for main extensions;
9. Centra track the costs of three test case projects -- one with more than 100 residential lots, one with between 50 – 100 residential lots, and one with fewer than 50 residential lots. A comparison of the actual costs of

fully optimized and completed Four Party Trench installations and installations done conventionally is to be projected; and

10. Centra calculate and provide the Board with the detailed total costs of the Four Party Trench program from the initial installation to July 31, 2006, compared to what would have been the costs had conventional main installation be utilized.

THE PUBLIC UTILITIES BOARD

"Graham F. J. Lane, C.A."  
Chairman

"G. Gaudreau, C.M.A."  
Secretary

Certified a true copy of  
Board Order No. 10/06 issued by  
The Public Utilities Board

\_\_\_\_\_  
Secretary