



# **GUIDELINES FOR PARALLEL CONSTRUCTION OF PIPELINES**

Technical support to The INGAA Foundation, Inc. by:

Process Performance Improvement Consultants  
1200 Post Oak Road, Suite 2705  
Houston, TX 77056  
USA

**INGAA Foundation Ad-Hoc Construction Committee**

**Steering Committee:**

El Paso	Dan Martin, Chair
INGAA Foundation	Rich Hoffmann
Willbros	John Allcorn
Willbros	Curt Simkin
Alliance	Harold Kraft
Williams	Mario DiCocco
Mears	John Fluharty
CenterPoint Energy	Debbie Ristig
Kinder Morgan	Dwayne Burton
Sheehan Pipe Line Construction	David Sheehan

**Parallel Construction Guidelines Development Work Group:**

Alliance Pipeline	Harold Kraft
INGAA Foundation	Rich Hoffmann
Mears	John Fluharty
Transcanada	Mark Domke
Williams	Mario DiCocco
Williams	Tim Powell
El Paso	Mike Morgan
El Paso	Pat Carey
Bi-Con Services	Denny Patterson
CenterPoint Energy	Erik Dilts
Transcanada	Tracy Schultz
Transcanada	Phillip Bohannon
Transcanada	Rob Reed
Willbros	Tom Alexander
Kinder Morgan	Kirk Steinberger
Price Gregory	Mike Langston
Helmer Risk Management	Scott Helmer
Process Performance Improvement Consultants, LLC	Mark Hereth, Technical Support and Facilitation

**INGAA Foundation**  
**Guidelines For**  
**Parallel Construction of Pipelines**  
**December 2008**  
**Version 1**

**I. Introduction**

We are in a period of increased pipeline construction activity that is expected to continue through 2011, and possibly beyond. The Federal Energy Regulatory Commission (FERC) and other Federal agencies are encouraging and sometimes requiring interstate natural gas pipeline operators to use existing rights-of-way (ROW), where possible, when proposing routes for new construction<sup>1</sup>. This is occurring throughout the country, even in more rural, sparsely populated areas<sup>2</sup>. Recently, there have been a series of incidents where existing pipelines have been damaged during **parallel construction**.

Foundation members have elected to address the challenges of this increased construction and the current regulatory environment by providing guidance to designers, constructors, operators and regulators to prevent personal injury or property damage to either the existing or new pipeline when new construction is undertaken parallel to existing facilities. Workshops were held in July and November 2007 to identify the means to address the concerns that arise during parallel construction, and again in April and June 2008, to define a path forward in developing guidelines for parallel construction.

The guidelines primarily focus on precluding unsafe conditions and reducing the occurrence of incidents of damage or personal injury during parallel construction adjacent to existing energy pipelines. The members recognize this approach can be applied to other linear facilities. The members believe, however, that expanding this effort to other facilities, such as electric transmission, sewer and water facilities, and telecommunication requires a more long-term initiative.

These guidelines were developed using a consensus process by a work group formed by Foundation members. The guidelines draw upon the experience and leading practices of the full breadth of INGAA Foundation members as well as practices used throughout the industry, including the Common Ground Alliance (CGA) Best Practices and API 1166 – Recommended Practice on Excavation Monitoring and Observation. The measures proposed in this document tie to those used as a standard practice in FERC proceedings and

---

<sup>1</sup> Federal Energy Regulatory Commission regulations (18 CFR §380.15[d][1]) pertaining to pipeline siting and maintenance requirements state that use, widening, or extension of existing rights-of-way must be considered in locating proposed facilities.

<sup>2</sup> The Energy Policy Act of 2005, Section 368, stipulates the need for construction of pipelines in common corridors, the most extensive of which is the West-Wide Corridor Study. This exhaustive study, now undergoing final review, before being issued, will amend federal land use plans across the West.

industry recommended practices. They constitute minimum measures and nothing prevents the parties from agreeing to additional or more stringent measures.

Whether or not construction is considered to be “parallel” is established by the beginning and ending of the **Encroachment Area**. The work group considered and ultimately rejected specifying a paralleling length threshold under which these guidelines will apply. The group arrived at a consensus that application of these guidelines was appropriate regardless of the length the existing and new facilities are in parallel.

While the primary emphasis of these guidelines is on the interaction between existing pipeline operators and those operators planning to construct in a parallel fashion, it is expected that contractors working on behalf of the pipeline operators, including environmental and survey professionals, design engineers, construction contractors, and operators of excavation and earth moving equipment will engage in work practices that are in conformance with these guidelines, and apply vigilance in identifying unanticipated circumstances that may indicate a problem. It is encouraged that these guidelines be referred to in contract documents executed with contractors and subcontractors.

## **II. Definitions**

**A. Parallel Construction** is construction of new facilities in close proximity to existing facilities. The extent of Parallel Construction is established by the beginning and ending of the Encroachment Area. Application of the guidelines is appropriate regardless of the length the existing and new facilities are in parallel.

**B. Encroachment Area** is the area where the limits of disturbance are within 50 feet of the centerline of the existing facility, or within the existing facility’s right-of-way (ROW) or other easement, whichever is greater. Additional distance may be required for other considerations, such as topography, side-hill lays, cathodic protection, environmental or engineering conditions, size of pipe and operating equipment, and topography.

**C. Active Excavation Area** is an area where the edge of the disturbance is within 25 feet of the centerline of existing facilities, unless on the ground situations stipulate additional clearance above ground as well as underground.

**D. Excavation Tolerance Zone** is an area within two feet (24 inches) of the existing facilities, or the distance mandated by state law where applicable, whichever is greater. (More conservative than CGA Practice 5-19 that stipulates 18 inches.)

**E. Existing Facility Representative** is the person designated by the existing facility’s operator to inspect when excavation equipment is operating in the Active Excavation Area. (Consistent with CGA, Excavation Practices, Practice 5-18.)

**F. Designated Contact** is the single point of contact identified within the existing facility and new pipeline company.

**G. Due Diligence Corridor** is equal to the width of the proposed survey corridor plus 50 feet on each side. The survey corridor is the corridor width typically used for biological surveys, for example.

### III. Guidelines for Consideration:

#### A. In General

INGAA Foundation Members engaged in parallel pipeline construction including operators of existing pipelines, the new pipeline, designers, constructors, surveyors, locators, environmental professionals, excavators and consultants will embrace the following:

*“Damage prevention is a shared responsibility. Whether you are a facility owner/operator, locator, design professional, one-call center employee, excavator/contractor or other stakeholder, ensuring safety of those who work or live in the vicinity of underground facilities and protecting our vital services is everyone’s responsibility.”* (Common Ground Alliance Best Practices, Version 5.0, Inside Cover Page, March 2008)

#### B. Preconstruction

1. As part of initial route selection, the new pipeline operator will perform due diligence to identify existing underground and adjacent aboveground structures and determine the service (pipeline [oil or gas], electric power line, sewer, water, telecommunication, or cable), size (diameter), materials of construction (steel, plastic, etc.), status of service (active or abandoned), pressure (or voltage) in a **Due Diligence Corridor**. The **Due Diligence Corridor** can be adjusted with respect to the centerline, based on the existence of wetlands, vegetative cover, topography, geology, pipe diameter, and required work area, among other factors.

The new pipeline operator will contact the operator of the existing facility and arrange for a Planning and Design review meeting. The respective organizations will establish single points of contact (referred to as “**Designated Contacts**”). The intent of the Planning and Design review meeting is for the parties to exchange key information about their existing and proposed new facilities, to work through and agree upon respective work processes and procedures, to establish clear lines of communication, and to discuss any other details needed to assure that the new facility may be constructed safely and efficiently, while simultaneously protecting the existing facility from damage. The meeting will address items such as placement of ROW; location in ROW; types of easements (exclusive, or open and undefined); construction methods and practices; unique landscape, terrain, or environmental situations; separation distances; and ground disturbance timing. The contact should be initiated no later than the filing of the request to begin the Pre-filing Process at FERC, or as early in the routing process as possible. (Refer to Planning and Design Review Meeting Agenda – Attachment A).

2. It is the new pipeline operator's responsibility to gain access for the purpose of conducting a survey. Subsurface Utility Engineering (SUE)<sup>3</sup> Quality Level C will be used for those facilities nearby, that is, making use of records tied to aboveground facilities and indirect locating as needed.
3. For new pipelines within the **Encroachment Area**, the new pipeline operator will enter into an agreement with the existing facility operator in the form of an encroachment agreement, if requested by the existing facility operator. The new pipeline operator will incorporate the relevant terms of the encroachment agreement into all supporting prime and sub- contract agreements.
4. The encroachment agreement will specifically address cathodic protection facilities. Coordination between parties will include the existing and new cathodic protection systems, location of concentrated ground beds, distributed anodes, test stations, potential interference, etc.
5. The new pipeline operator will identify areas where blasting will be used along the route within 300 feet of the existing facilities. A blasting plan must be developed and agreed to by both parties.
6. In preparation of conducting a corridor survey, the new pipeline operator will contact the existing facility operator or use the one-call system where a design ticket is available. The one-call request will include specific starting and ending points using GPS coordinates to ensure that any **Encroachment Areas** are included.
7. In addition to state requirements for one-call center notification, the existing facility **Designated Contact** will notify the new pipeline **Designated Contact** that there is no conflict or that the line will be marked (referred to as "positive response"<sup>4</sup>). (Consistent with CGA, Locating and Marking, Practice 4-9.)
8. The existing facility operator will, or by delegation, cause<sup>5</sup> its facilities to be located and marked using appropriate line location methods that will assure the accurate placement of the markers.

---

<sup>3</sup> - ASCE 38-02, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, 2002.

<sup>4</sup> - A one-call request at this stage results in a design ticket in some states. In some states this requires only an exchange of information. It is the intent of this agreement that existing lines be marked if they are within the Due Diligence Corridor.

<sup>5</sup> - The phrase, "will or cause" is used to indicate that the existing operator may elect to locate and mark the line, or through agreement allow the new pipeline or it's agent to locate and mark the line.

9. Markers will be placed in the **Due Diligence Corridor** at a maximum spacing not to exceed 200-foot intervals or line-of-sight, whichever is closer, and all points of inflection (“PIs”).
10. The new pipeline operator will regularly communicate and coordinate with the operators of the existing facilities concerning the status of the project for the duration of the project. (Consistent with CGA, Planning and Design, Practice 2-4.)

**C. Construction**

1. The new pipeline operator will contact the existing facility operator at least 30 days prior to initial ground disturbance.
2. The new pipeline operator will provide the existing facility operator with a proposed schedule for construction. The new pipeline operator will provide weekly updates during the construction process until such time that the new pipeline’s activities are no longer in the **Encroachment Area**. The end of the process will be specified as the completion of final restoration and any associated follow-up.
3. The new pipeline operator will use the one-call system in advance of beginning ground disturbing activity.
4. The existing facility operator will, or by delegation, cause its facilities to have marks adjusted to a maximum spacing not exceeding 50-feet, including all PIs. This can be adjusted at the discretion and agreement of both parties. Existing facilities will be continuously located, marked and there will be positive identification at PIs. The marks will be maintained for the duration of work planned in the **Encroachment Area**.
5. In general, the existing facility operator has the option to have an inspector on site during any ground disturbance in the active excavation area even if the activities follow the plans established in the Design Review and subsequent meetings. The existing facility operator will have an inspector on site during any ground disturbance when changes in prior plans within the **Active Excavation Area** have not been evaluated by the existing operator. (Consistent with API 1166).
6. The new pipeline operator will notify the existing facility operator’s **Designated Contact** to provide ample time to respond. Notification will take place no less than 24 hours prior to beginning ground disturbance in an **Active Excavation Area**. There may be circumstances where a spread crew may want to move to an area for which notification has not been provided. Excavation will not commence until the existing pipeline operator has been notified and agrees to provide an observer or authorizes the new pipeline operator in writing to commence with work.

7. The new pipeline operator will ensure that only agreed to techniques are used within the **Excavation Tolerance Zone** and for excavations that may expose the existing facility.
8. The existing facility's representative has the authority to stop work at any time he/she believes the safety of personnel or existing facilities are endangered.
9. The new pipeline operator will ensure that excavation equipment with teeth, such as on a backhoe bucket, will be barred and side cutters removed when working in an **Active Excavation Area**, except where a site specific plan has been approved by the existing facility.
10. The new pipeline operator or pipeline constructor will not excavate unless they have visual confirmation of the existing pipeline's location. This means that no excavation will be conducted within the **Active Excavation Area** of an existing pipeline unless there are marks indicating the placement of the pipeline, (until such a point where the marks extend off the ROW indicating that the existing pipeline is no longer within the **Active Excavation Area**).
11. If the existing pipeline operator observes excavation equipment in an **Encroachment Area** and is unaware of planned activities, a contact card on a string, or other comparable method, will be placed on the door handle, or steering wheel, of the subject equipment. For example the card might state, "Natural gas facility in the vicinity, danger, call before you dig, Call 811".
12. The new pipeline operator will identify any new areas where blasting will be used along the route within 300 feet of the existing facilities.
13. The new pipeline operator will identify and propose plans for all crossings of the existing pipeline(s), and such plans will be agreed upon by both parties. Discrete crossings will be addressed in the encroachment agreement.
14. The new pipeline operator will be responsible for all damages, repairs and rehabilitation caused by its construction activities, as well as restoration of disturbed portions of the existing facility right-of-way, to the satisfaction of all parties, including the existing facility and any authorizing agencies.



**D. Post Construction**

1. The new pipeline and existing facility operators will hold a post-construction review meeting to identify problems and issues, as well as define remedies or corrective actions. The new pipeline operator will document the meeting including a review of the effectiveness of the guidelines and areas of improvement. (Refer to Recommended Agenda – Post Construction Review and Lessons Learned– Attachment B).
2. The new pipeline and existing facility operators will jointly share any lessons learned in the process of project execution or in the post-construction project review through the INGAA Foundation, Executive Director.
3. As-built centerline survey data for the new pipeline will be provided to the existing facility operator to assist them in identifying the location of the new pipeline during future maintenance and expansion activities.

**Attachment A  
Planning and Design Review Meeting(s) Agenda**

Overview of Project  
Identify **Designated Contact**  
Identify parallel segment begin-end points – such as alignment drawings and GPS coordinates  
Identify locations where working in close proximity – such as crossings  
Availability and accuracy of as-built alignment documentation  
Location of existing and proposed appurtenances  
Anticipated route  
Placement of ROW  
Location in ROW (nominal and known exceptions)  
Type of easement, exclusive, or open and undefined,  
Separation  
Anticipated crossings (including directional drills)  
Construction methods and practices, including blasting  
Identification of potential hazards and emergency response  
Existing facility’s encroachment and crossing agreements  
Existing facility’s policy on hand excavation or other excavation techniques around underground facilities  
Schedule  
Updating process

---

**Attachment B**  
**Post-Construction Review and Lessons Learned Agenda**

What worked?

What didn't?

Did the guidelines make the project safer?

Did the guidelines make communication more effective?

What improvements or additions would you make to the process?