

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND
TRANSPORTATION COMMISSION

Complainant,

v.

PUGET SOUND ENERGY, INC.,

Respondent.

DOCKET PG-041624

SUBSTITUTE SECOND SETTLEMENT
AGREEMENT

1 As explained in detail below, this Second Settlement Agreement proposes to resolve certain issues arising from Paragraphs 14 and 15 of the Revised Settlement Agreement previously approved by the Commission in this docket.

I. NATURE OF THE AGREEMENT

2 This Second Settlement Agreement (“Agreement”) is entered into between the Staff of Complainant Washington Utilities and Transportation Commission (“Staff”), Respondent Puget Sound Energy, Inc. (“PSE”), and the City of Bellevue, for the purpose of resolving certain issues addressed by the Commission in Order 07 in this docket.

3 The Agreement is expressly subject to approval by the Washington Utilities and Transportation Commission (the “Commission”), and it is not effective before such approval.

II. EFFECTIVE DATE

4 The effective date of the Agreement is the date of the Commission’s order approving the Agreement.

III. PARTIES

5 The parties to this Agreement are Staff, PSE, and the City of Bellevue (collectively,
“Parties”).

IV. BACKGROUND

6 PSE is a public service company subject to regulation by the Commission under
Title 80 RCW. As pertinent to this Agreement, PSE operates as a “gas company” as that
term is defined in RCW 80.04.010. PSE owns and operates a natural gas distribution system
in Western Washington. PSE serves residential, commercial and industrial customers with
natural gas, under tariffs subject to Commission regulation. PSE is subject to Commission
safety rules applicable to natural gas pipelines. *E.g.*, RCW 80.28.210.

7 Commission Docket PG-041624 arose as a result of a fatal explosion that occurred in
Bellevue, Washington at the residence of a PSE natural gas service customer, Mrs. Frances
Schmitz.¹ The Commission issued a Complaint on September 13, 2004, initiating Docket
PG-041624, and promptly conducted an emergency adjudicative proceeding.

8 Staff, PSE and the City of Bellevue, Washington, entered into a Revised Settlement
Agreement to resolve all contested issues between them in Docket PG-041624. On October
7, 2005, the Commission approved the Revised Settlement Agreement pursuant to Order 07,
“Order Approving Settlement Agreement.”²

9 Paragraph 14 of the Revised Settlement Agreement requires PSE to gather pipeline
data for certain services, including corrosion leak history (“LMS”), cathodic protection
history, Exposed Pipe Condition Reports (“EPCR”) information, USGS soils information,

¹ A detailed explanation of the facts of this case is contained in the testimony and exhibits in the record in this docket.

² On October 19, 2005, the Commission issued Order 08, Order Modifying Order No. 7 Approving Settlement Agreement. The modifications are not pertinent here.

and information from interviews with field personnel who have had the opportunity to work on existing buried pipe, including Quality Assurance, Corrosion Control, and Construction.

10 Paragraph 15 of the Revised Settlement Agreement further requires PSE Corrosion personnel to work in a collaborative effort with Staff to evaluate the data gathered and described in Paragraph 14 of the Revised Settlement Agreement to identify issues or trends of concern related to services.

11 PSE has gathered pipeline data in accordance with Paragraph 14 of the Revised Settlement Agreement and collaborated with Staff in accordance with Paragraph 15 of the Revised Settlement Agreement to identify issues or trends of concern related to services.

12 PSE and Staff have identified approximately 100,000 services and categorized them into one of the following four Wrapped Steel Service Assessment Program mitigation categories: (i) standard mitigation (lowest priority); (ii) increased leak survey; (iii) scheduled replacement; and (iv) priority replacement (highest priority). Set forth immediately below is a chart showing PSE's current categorization of the 100,000 services. The Parties expect that the number of services in each category will change over time, and services will be added to or be taken out of these categories.

Summary of Wrapped Steel Service Assessment Mitigation Categories based upon
December 27, 2006 WSSAP risk model results

Mitigation Category	Action	Approximate Number of Services
Priority Replacement	Service Replacement	516
Scheduled Replacement	Identify Replacement Projects and Twice Annual Leak Survey (until service is replaced)	8,470
Increased Leak Survey	Annual Leak Survey	23,100
Standard Mitigation	No Additional Action Required	69,281
	Total	101,367

V. AGREEMENT

13 The Parties have reached agreement on the issues raised in paragraphs 14 and 15 of the Revised Settlement Agreement and present their agreement for adoption by the Commission. The Parties voluntarily enter this Agreement without hearing or adjudication of any issues of fact or law to resolve the matters in dispute between them in what each Party believes is an appropriate manner, in light of the circumstances and the risks associated with litigation.

Replacement of Services

14 PSE shall replace all of the services in the two highest Wrapped Steel Service Assessment Program mitigation categories (priority replacement and scheduled replacement) on or before December 31, 2010. In this effort, PSE shall replace all services identified in the priority replacement mitigation category on or before December 31, 2007. PSE shall replace all services identified in the scheduled replacement mitigation category on or before December 31, 2010. Should circumstances beyond the control of PSE preclude replacement of certain of these services within the prescribed time frame, PSE will document the relevant services, the circumstance precluding replacement within the time frame, and the estimated replacement date. Such documentation will constitute a waiver of the obligation to complete replacement of services by December 31, 2010. The Parties agree that additional services in the Wrapped Steel Service Assessment Program mitigation categories may migrate into alternate mitigation categories over time. As PSE's Wrapped Steel Service Assessment Program matures, more data will be added to allow for better discrimination between service lines and the type of remediation they require. Specifically, PSE's goal is to realign those services currently identified in the "increased leak survey"

category into either the standard mitigation or scheduled replacement categories.

15 PSE shall replace any service that migrates into the priority replacement category by December 31 of the calendar year that immediately succeeds the calendar year in which such service migrated into the priority replacement category.

Leak Surveys

16 PSE shall conduct leak surveys on each service in either the priority replacement mitigation category or the scheduled replacement mitigation twice per calendar year until such service is replaced. PSE shall conduct these surveys at a frequency of not less than four months and not greater than eight months between surveys.

17 PSE shall conduct leak surveys on each service in the increased leak survey mitigation category once per calendar year until such service is replaced. PSE shall conduct these surveys at a frequency of not more than fifteen months between surveys.

18 PSE shall respond to, grade and repair each service that is discovered to be leaking in accordance with PSE's then-current Operating Standards and Procedures. PSE shall identify and rate each service with new, active or repaired leaks in subsequent runs of the Wrapped Steel Service Assessment Program model.

Cathodic Protection Electrical Surveys

19 In order to enhance the reliability of PSE's Wrapped Steel Service Assessment Program, PSE shall conduct no less than 1,000 cathodic protection electrical surveys of a random sample of services in the standard mitigation and annual leak survey mitigation categories on or before December 31, 2010. Further, PSE shall investigate all indications from these surveys that: (i) meet the threshold criteria identified in Exhibit A; and (ii) are viably accessible. PSE will provide Staff a copy of its sample and sampling methodology

before PSE conducts any of these surveys. PSE will also give Staff prior notice of field investigations of findings from these surveys to allow for Staff to observe the field investigations if Staff wishes to do so.

Potential Expansion of Replacement of Services

20 As PSE develops plans for the replacement of services in the priority replacement and scheduled replacement mitigation categories pursuant to paragraphs 13 and 14 of this Agreement, PSE shall: (i) identify if such replacement projects should be expanded to include replacement of additional services in accordance with the Wrapped Steel Service Assessment Program Gas Infrastructure Replacement Process; and (ii) investigate adjacent mains for evidence of corrosion. In investigating adjacent mains for evidence of corrosion, PSE may review construction and operation and maintenance records; conduct electrical surveys; or perform excavations and direct examination.

Updates to Wrapped Steel Service Assessment Program Model

21 PSE will continue to update the Wrapped Steel Service Assessment Program model to better assess the validity of the model and the ongoing propriety of PSE's service replacement strategies. If any annual status report provided pursuant to paragraph 24 of this Agreement demonstrates that the number of leaks in the standard mitigation category exceeds 2.76 percent of the services within such category (six (6) times the historic PSE leak rate (0.46 percent)), then PSE shall recalibrate the Wrapped Steel Service Assessment Program model to more accurately reflect the risk of failure of services within such category.

22 PSE shall submit to the Commission on or before September 15 of each calendar
year an updated Wrapped Steel Service Assessment Program model run and explain any
changes in the mitigation category population.

Reports to the Commission and City of Bellevue

23 PSE has submitted to the Commission a histogram illustrating the number of
Wrapped Steel Service Assessment Program services installed by year of installation.

24 PSE shall submit to the Commission on or before April 1 of each calendar year a
status report that identifies the number of leaks discovered, by cause, in the Wrapped Steel
Service Assessment Program population during the previous calendar year. PSE shall
submit the first such status report on or before April 1, 2008.

25 PSE shall submit to the Commission on or before April 1 of each calendar year a
status report that identifies the number of Wrapped Steel Service Assessment Program
services replaced during the previous calendar year. PSE shall submit the first such status
report on or before April 1, 2008.

26 PSE shall submit to the City of Bellevue on or before of April 1 of each calendar
year a status report that identifies the number of leaks discovered, by cause and location, in
the Wrapped Steel Service Assessment Program population within the City of Bellevue
during the previous calendar year. PSE shall submit to the City of Bellevue on or before
April 1 of each calendar year a report that identifies, by location, Wrapped Steel Service
Assessment Program services replaced within the City of Bellevue during the previous
calendar year. PSE also shall submit to the City of Bellevue on or before September 15th of
each calendar year an updated Wrapped Steel Service Assessment Mitigation Program

model run for services in the City of Bellevue and explain any changes in the mitigation category population.

Review by the City of Bellevue, Washington

27 PSE has periodically briefed the City of Bellevue on the matters addressed in this Agreement. Prior to the filing of this Agreement with the Commission, PSE provided a copy of this Agreement to the City of Bellevue for its review and input. In addition, the City of Bellevue will be notified of any Commission proceedings related to this Agreement.

VI. GENERAL PROVISIONS

Nature of the Agreement

28 The Parties agree that this Agreement is an appropriate resolution of all contested issues between them with respect to the Revised Settlement Agreement, given the unique facts and circumstances surrounding this matter and the risks of litigation. The Parties understand that this Agreement is subject to Commission approval and it is not effective unless and until it is approved by the Commission.

29 Nothing in this Agreement is intended to limit or bar any other entity from pursuing legal claims, or to limit or bar PSE's ability to assert defenses to such claims.

30 The Parties recognize that this Agreement represents a compromise of each Party's positions. As such, conduct, statements, and documents disclosed during negotiations of this Agreement shall not be admissible as evidence in this or any other proceeding, except in any proceeding to enforce the terms of this Agreement or any Commission Order fully adopting those terms. This Agreement shall not be construed against any Party because it was a drafter of this Agreement.

31

Each Party agrees to provide all other Parties the right to review in advance of publication any and all announcements or news releases that any other Party intends to make about the Agreement (with the right of review to include a reasonable opportunity to request changes to the text of such announcements). Each Party also agrees to include in any news release or announcement a statement to the effect that the Commission Staff's recommendation to approve the Agreement is not binding on the Commission itself.

Integrated Terms of Settlement

32

The Parties have negotiated this Agreement as an integrated document to be filed with the Commission only upon execution. Once the Agreement is executed, the Parties agree to support the Agreement in its entirety. The Agreement supersedes any prior oral and/or written agreements on issues addressed herein, if any.

Manner of Execution

33

This Agreement is considered executed when all Parties sign the Agreement. A designated and authorized representative may sign the Agreement on a Party's behalf. The Parties may execute this Agreement in counterparts. Parties may also authorize a party to sign on its behalf. If the Agreement is executed in counterparts, all counterparts shall constitute one agreement. An Agreement signed in counterpart and sent by facsimile or email is as effective as an original document. A faxed or emailed signature page containing the signature of a Party is acceptable as an original signature page signed by that Party. Each Party shall indicate the date of its signature on the Agreement. The date of execution of the Agreement will be the latest date indicated on the signatures.

Procedure

34 Once this Agreement is executed, the Parties agree to cooperate in promptly filing this Agreement with the Commission for approval, but after PSE provides a copy of the Agreement to the City of Bellevue. The Parties agree to support approval of this Agreement in proceedings before the Commission, through testimony and/or briefing. However, if there is a Commission order, rule or policy statement issued after the date this Agreement is executed but before it is approved, and that order, rule or policy statement, changes the posture of the Agreement in any Party's view, comments may be made to the Commission as to how the Agreement should be viewed in light of that order, rule or policy statement. The Parties understand that the Commission will decide the appropriate procedures for presentation and consideration of the Agreement.

35 In the event the Commission rejects all or any portion of this Agreement, each Party reserves the right to withdraw from this Agreement by written notice to the other Parties and the Commission. Written notice must be served within 10 business days of the date of the Commission order rejecting all or any portion of this Agreement. In such event, no Party will be bound or prejudiced by the terms of this Agreement. The Parties will jointly request a prehearing conference for purposes of establishing a procedural schedule to complete the case.

No Precedent

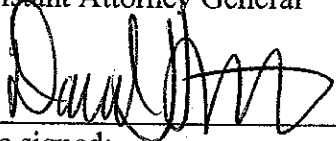
36 No Party shall be deemed to have agreed that this Agreement is precedent for resolving any issues in any other existing or future proceeding, other than a proceeding for enforcement of this Agreement.

For Commission Staff:

For Puget Sound Energy, Inc.:

ROBERT M. McKENNA
Attorney General

Donald T. Trotter
Assistant Attorney General



Date signed: May 4, 2007

Susan McLain
Senior Vice President of Operations

Date signed:

For City of Bellevue

LORI RIORDAN
City Attorney
Cheryl A. Zakrzewski
Assistant City Attorney

Date signed:

No Precedent

36

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For Commission Staff:

For Puget Sound Energy, Inc.:

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Attorney General

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Senior Vice President of Operations

Date signed:

Date signed:

For City of Bellevue

LORI RIORDAN
City Attorney
Cheryl A. Zakrzewski
Assistant City Attorney



Date signed: 5-30-07

No Precedent

36

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For Commission Staff:

For Puget Sound Energy, Inc.:

ROBERT M. McKENNA
Attorney General

Donald T. Trotter
Assistant Attorney General



Susan McLain
Senior Vice President of Operations

Date signed:

5-2-07

Date signed:

For City of Bellevue

LORI RIORDAN
City Attorney
Cheryl A. Zakrzewski
Assistant City Attorney

Date signed:

Exhibit A
Puget Sound Energy
Wrapped Steel Service Assessment Program
Electrical Survey Procedure and Criteria

This procedure and attached criteria follows the same procedure and references within the WSSAP Final Report Appendix F-Electrical Survey Procedure and Criteria.

PURPOSE

1. This integrity study is designed to locate anomalies on wrapped steel services identified and selected utilizing PSE's WSSAP risk model. The anomalies will be evaluated and repairs made in accordance with PSE's Gas Operating Standards.

PROCEDURE

1. Gather service specific data on services utilizing PSE's plat maps and service design drawings (D4's).
2. Locate and mark out service line.
3. Install additional test stations as required to perform the surveys.
4. Identify regions by factors that will affect the survey tools performance based on Table 6.1 of IMP Standard 7500.4100, "External Corrosion Direct Assessment Plan." (Attached to this document).
5. Run two surveys, Close Interval Survey (CIS) and Direct Current Voltage Gradient (DCVG). The surveys will be performed in accordance with PSE's Gas Field Procedures 4515.1710, "Conducting a Close Interval Survey (CIS)," and 4515.1720, "Conducting a Direct Current Voltage Gradient (DCVG) Survey."
6. Data for the services will be presented both graphically and in a table.
7. Indication severity will be determined using criteria set forth in IMP Standard 7500.4100, "External Corrosion Direct Assessment Plan," Tables 9-1 and 10-1. (Attached to this document).
8. If the results from the indirect inspection are not consistent with the historical and construction data, then tool selection for the indirect inspections will be reassessed.
9. Direct examination excavation sites will be chosen based on indication prioritization Table 13-1 of IMP Standard 7500.4100, "External Corrosion Direct Assessment Plan." (Attached to this document).
10. The inspections at excavation sites will be made in accordance with PSE's Direct Examination Procedure.
11. A direct examination of all survey indications prioritized as immediate action will be made within 180 days of completing the prioritization of survey data classifications. In cases where there is sensitivity on the part of the homeowner or direct examination might be unacceptable, services with severe anomalies will be replaced rather than examined.
12. A direct examination of all survey indications prioritized as scheduled action will be carried out within 12 months of completing the prioritization of survey data classifications.
13. Where significant corrosion activity is found during the course of the direct examinations, a root cause analysis shall be performed to determine the underlying causes of the significant corrosion activity.
14. If the root cause analysis that is performed at areas of significant corrosion activity reveals conditions that exceed the limitations of the indirect inspection tools that were selected, the service will be replaced.
15. At the completion of the direct examination the WSSAP database will be re-populated with the survey results.
16. Inspection and examination records will be maintained for the life of the pipeline.

References

5/4/2007

Exhibit A
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Gas Operating Standards	2575.1700 Repairing Steel and Cast-Iron Pipelines 2575.2800 Examining Buried Pipelines 2600.1100 Field Coatings for Pipe and Fittings
Gas Field Procedures	4515.1710 Conducting a Close Interval Survey 4515.1720 Conducting a Direct Current Voltage Gradient Survey 4515.1755 Examining Buried Pipe 4515.1210 Taking Pipe-to-Soil Potential Reads 4515.1760 Taking a Pit Depth Measurement
IMP Standard	7500.4100 External Corrosion Direct Assessment Plan
Forms	2453 Exposed Pipe Condition Report 4023 Indication alignment and Prioritization 4027 Excavation Site Description 4029 Root Cause Analysis

Exhibit A
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Figure 1. Electrical Survey Process

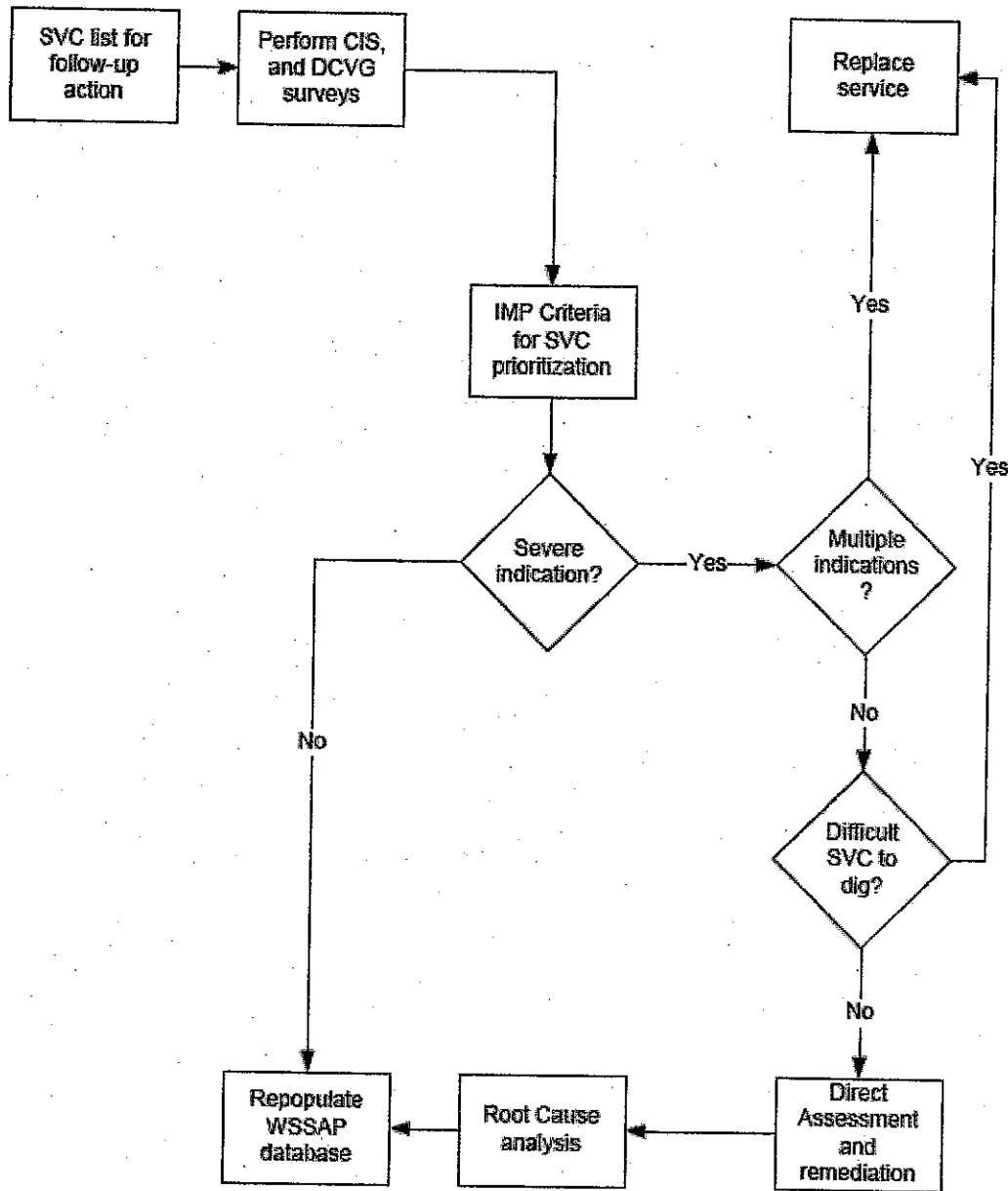


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Table 6-1: Criteria for Defining ECDA Regions

Data Element	Criteria
Material (steel, cast iron, etc.)	Special considerations should be given to locations where dissimilar metals are joined.
Seam type	Locations with pre-1970 low-frequency electric resistance welded (ERW) or flash welded pipe with increased selective seam corrosion susceptibility may require separate ECDA regions
Bare Pipe	Segments with bare pipe in coated pipelines should be in separate ECDA regions
Coating Type - pipe	Mainline coating types within each unique ECDA region must have the same capacity for shielding pipe beneath areas of disbondment (i.e., coatings of significantly different dielectric constants require separate ECDA regions)
Coating Type - joints	Joint coating types within each unique ECDA region must have the same capacity for shielding pipe beneath areas of disbondment (i.e., coatings of significantly different dielectric constants require separate ECDA regions)
Coating Condition – high dielectric (shielding) coating types	The coating condition, expressed in terms of the amount of pipe exposed at holiday locations must be the same for each ECA region, when assessed on a scale of “good”, “fair” and “poor”
Coating Condition – non-shielding coating types	The coating condition expressed in terms of both the amount of coating disbondment and the amount of pipe exposed at holiday locations must be the same for each ECDA region, when assessed on a scale of “good”, “fair” and “poor”.
Bonds to adjacent structures	Each unique ECDA region must represent a unique condition with respect to bonds to adjacent structures. In the case where the adjacent structures are buried, such as is the case for adjacent pipelines, the coating condition, number, and size of the buried structures must be generally the same throughout each ECDA region.
Proximity to other pipelines, structures, high-voltage electric transmission lines, and rail crossings	Regions where the CP currents are significantly affected by external sources should be treated as separate ECDA regions
Interference	Each unique ECDA region must be equally susceptible to stray current and interference – both from DC and AC sources.

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Puget Sound Energy
Wrapped Steel Service Assessment Program
Electrical Survey Procedure and Criteria

Data Element	Criteria
Soil characteristics / types	Each unique ECDA region must have soil conditions that are representative of the same general soil resistivity. For instance, low resistivity soils, such as moderately to poorly drained loam's, sands, and clays must be considered to be a distinct ECDA region from well-drained sands, or rocky soils.
Drainage	Influences where corrosion is most likely; significant differences may require separate ECDA regions
River Crossings / wetlands	This condition, where present, is cause for the creation of a unique ECDA region.
River weights and anchors	This condition, where present, may be cause for the creation of a unique ECDA region.
Frozen ground	This condition, where present, is cause for the creation of a unique ECDA region.
Land use (paved roads, etc.)	Paved roads, where they exist may require the creation of a unique ECDA region. Other land use issues can influence ECDA application and ECDA region selection
Locations of, and construction methods used at casings	This condition, where present, is cause for the creation of a unique ECDA region.
Anodic zones on bare pipe	This condition, where present, is cause for the creation of a unique ECDA region.
Route Changes / modifications	Changes may require separate ECDA regions
Route maps / aerial photos	Provides general applicability information and ECDA region selection guidance
Depth of cover	May require different ECDA regions for different ranges of depths of cover
Diameter	A diameter change beyond 3 nominal pipe sizes is cause for the creation of a unique ECDA region.
Construction Practices	Construction practice differences may require separate ECDA regions
CP system type	Each ECDA region must have the same CP system type and general design (i.e., interruptible anodes vs. non-interruptible anodes, anode spacing, rectifiers)

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Wrapped Steel Service Assessment Program
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Data Element	Criteria
Test point locations	Each ECDA region must have the same general accessibility via test point locations.
CP maintenance history / years without CP	May provide input when defining ECDA regions
Previous CIS data	May provide input when defining ECDA regions.
Monitoring programs – coupons, patrol, leak surveys, etc.	May provide input when defining ECDA regions
Pipe inspection reports – excavation	May provide input when defining ECDA regions
Locations of bends, including miter bends and wrinkle bends	Presence of miters and wrinkle bends may influence ECDA region selection
Locations of valves, clamps, supports, taps, mechanical couplings, expansion joints, cast iron components, tie-ins, insulating joints	Significant drains or changes in CP current should be considered separately; special considerations should be given to locations at which dissimilar metals are connected.
Repair history/records (e.g., steel / composite repair sleeves, repair locations, etc.)	Prior repair methods, such as anode additions can create a local difference that may influence ECDA region selection
Pipe operating Temperature / Age	Each ECDA region must have the same pipe temperature history with respect to the amount of time spent above the maximum operating temperature rating of the coating system. Significant differences require the creation of a new ECDA region.
Evidence of MIC (Microbiologically-Influenced Corrosion)	This condition, where present, is cause for the creation of a unique ECDA region.
Leak / rupture history (external corrosion)	Can indicate condition of existing pipe
Accessibility	Accessibility issues may limit the use of certain indirect inspection tools

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Electrical Survey Procedure and Criteria

Table 9-1: Threshold Criteria for Various CIS Measurement Techniques

Circumstance	Optimal Measurement Technique(s)	Adopted Threshold Criteria*
Sacrificial anode CP system (not designed to allow interruption of all anodes simultaneously)	<p>"On" Survey</p> <ul style="list-style-type: none"> - Compensate for IR error by placing reference electrode directly over pipeline and as remote as possible from sacrificial anode. - If in doubt, or when potential readings are questionable, excavate to allow placement of reference electrode as close as possible to pipeline. 	-850 mV "on"
Sacrificial anode CP system (designed to allow interruption of all anodes simultaneously)	Polarization survey	-100 mV polarization shift.
<p>Impressed Current CP system</p> <ul style="list-style-type: none"> - Distributed anode impressed current system - Coating in relatively good condition 	Instant-off or Polarization Survey (for pipelines with a high dielectric strength coating, the instant-off technique may be easiest to use, however polarization technique may also be used)	-850 "off" (for instant-off); -100 mV polarization shift (for Polarization Survey)
<p>Impressed Current CP system</p> <ul style="list-style-type: none"> - Distributed anode impressed current system - Bare pipeline, or coating in poor condition 	Polarization Survey	-100 mV polarization shift
<p>Impressed Current CP system</p> <ul style="list-style-type: none"> - Remote anode system - Low soil resistivity - High coating dielectric strength - Low circuit resistance of CP system 	<p>Instant Off Survey, Polarization Survey, On Survey</p> <ul style="list-style-type: none"> - If an "on" survey is used, care should be taken to place the reference cell as close to the pipeline as possible. If in doubt, or when potential readings are questionable, excavate to allow placement of reference electrode as close as possible to pipeline. 	<ul style="list-style-type: none"> - If an "on" survey is used, threshold criterion should be established on basis of knowledge of the dielectric strength of the coating, size of the pipeline, soil resistivity, distance and voltage at the anodes, rectifier output voltage, and rectifier output current. - If "instant off" survey is used, criterion should be -850 mV. - If polarization survey is used, criterion should be -100 mV.
<p>Impressed Current CP system</p> <ul style="list-style-type: none"> - Remote anode system, relatively good coating 	Instant Off Survey, Polarization Survey	-850 mV instant off, -100 mV polarization shift
<p>Impressed Current CP system</p> <ul style="list-style-type: none"> - Remote anode system, bare, or poorly coated pipeline 	Polarization Survey	-100 mV polarization shift

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Electrical Survey Procedure and Criteria

Table 10-1: Guidelines for Severity Classification of Indications Utilizing DCVG Technique

Indication Classification	Defining Criteria	Comments
Minor	$\leq 15\%$ IR AND cathodic / cathodic current flow characteristics	Indications in this category are often considered of low importance, and repair is usually not required.
Moderate	$\leq 60\%$ IR AND cathodic / neutral current flow characteristics OR $> 15\%$ to $\leq 60\%$ IR AND cathodic / cathodic current flow characteristics	In this category, the indications tend to be larger, and/or the pipe at the location of the indications returns to native potential when the CP is interrupted.
Severe	$> 60\%$ IR OR anodic / anodic current flow characteristics	Indications in this category are largest and/or the pipe at the location of the indications is anodic at some point in the interruption cycle.

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Table 13-1: Guidelines for Prioritizing Indirect Inspection Indications

Immediate Action	Scheduled Action	Suitable for Monitoring
<p>Multiple severe indications in close proximity to one another;</p> <p>Isolated indications that are classified as severe by more than one indirect inspection technique at roughly the same location;</p> <p>Where significant prior corrosion is suspected, individual indications that are classified as severe by one or more indirect inspection techniques;</p> <p>Where significant prior corrosion is suspected, groups of indications that are classified as moderate by one or more indirect inspection techniques; and,</p> <p>Indications which, when combined with other data, suggest the presence of third party damage</p>	<p>Regardless of the suspected prior corrosion activity, all severe indications that were not placed in the "immediate" category;</p> <p>Where moderate prior corrosion is suspected, all indications that are classified as moderate by one or more indirect inspection techniques, and that were not placed in the "immediate" category; and,</p> <p>In regions where severe prior corrosion is suspected, groups of indications, regardless of severity classification that were not placed in the "immediate" category.</p>	<p>All indications not otherwise classified as "immediate" or "scheduled".</p>