

**US Department of Transportation
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety**

**Gas IMP Field Verification Inspection
49 CFR Subparts 192.911, 192.921, 192.933, & 192.935**

General Notes:

1. This Field Verification Inspection is performed on field activities being performed by an Operator in support of their Integrity Management Program (IMP).
2. This is a two part inspection form:
 - i. A review of applicable Operations and Maintenance (O&M) and IMP processes and procedures applicable to the field activity being inspected to ensure the operator is implementing their O&M and IMP Manuals in a consistent manner.
 - ii. A Field Verification Inspection to determine that activities on the pipeline and facilities are being performed in accordance with written procedures or guidance.
3. Not all parts of this form may be applicable to a specific Field Verification Inspection, and only those applicable portions of this form need to be completed. The applicable portions are identified in the Table below by a check mark. Only those sections of the form marked immediately below need to be documented as either "Satisfactory"; "Unsatisfactory"; or Not Checked ("N/C"). Those sections not marked below may be left blank.

Operator Inspected: Puget Sound Energy
Op ID: 22189

Perform Activity (denoted by mark)	Activity Number	Activity Description
	1A	In-Line Inspection
	1B	Hydrostatic Pressure Testing
x	1C	Direct Assessment Technologies
	1D	Other Assessment Technologies
x	2A	Remedial Actions
x	2B	Remediation – Implementation
	3A	Preventive & Mitigative – additional measures evaluated for HCAs
	3B	Preventive & Mitigative – automatic shut-off valves
x	4A	Field Inspection for Verification of HCA Locations
	4B	Field Inspection for Verification of Anomaly Digs
	4C	Field Inspection to Verify adequacy of the Cathodic Protection System
	4D	Field inspection for general system characteristics
	attachment	Anomaly Evaluation Report
	attachment	Anomaly Repair Report

Gas IMP Field Verification Inspection Form

Name of Operator: Puget Sound Energy

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Company Official:	Bert Valdman
Phone Number:	(425) 462-3193
Fax Number:	(425) 462-3770
Operator ID:	22189

Persons Interviewed	Title	Phone No.	E-Mail
Darryl Hong	Primary Contact	(425) 462-3911	Darryl.hong@pse.com
Alan Mulkey	Consulting Engineer	(425) 462-3889	Alan.mulkey@pse.com

OPS/State Representative(s): Joe Subits

Date(s) of Inspection: June 29, 2010

Inspector Signature: Joe Subits

Date: July 12, 2010

Pipeline Segment Descriptions: *[note: Description of the Pipeline Segment Inspected as part of this field verification. (If information is available, include the pipe size, wall thickness, grade, seam type, coating type, length, normal operating pressure, MAOP, %SMYS, HCA locations, class locations, and Pipeline Segment boundaries.)]*

2 Miles in Midway
1 Mile in South Seattle

Site Location of field activities: *[note: Describe the portion of the pipeline segment reviewed during the field verification, i.e. milepost/stations/valves/pipe-to-soil readings/river crossings/etc. In addition, a brief description and case number of the follow up items in any PHMSA compliance action or consent agreement that required field verification. Note: Complete pages 8 & 9 as appropriate.]*

~~No field work done during visit. Information obtained for checklist was based on PSB records.~~

Summary:

The East King County unit has three miles of HCA. All HCA's were assessed using direct assessment. One anomaly with damaged pipe was found. This is believed to have resulted from original construction damage. A clock spring was installed though it was not required. PSE was being conservative in their repair work. PSE transmission lines operate at < 30% SMYS.

Findings:

Several anomalies were dug. All but one anomaly was coating damage only. The one instance of pipe damage was a rock dent probably resulting from original construction.

Key Documents Reviewed:

Document Title	Document No.	Rev. No	Date
Rock dent anomaly report			3/25/2010
Repair report			5/26/2010
QA report			6/10/2010
Repair procedure			4/20/2010

Part 2 - Remediation of Anomalies

2A. Remedial Actions – Process	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that remedial actions complied with the Operator's procedural requirements.			x	
Witness anomaly remediation and verify documentation of remediation (e.g. Exposed Pipe Reports, Maintenance Report, any Data Acquisition Forms). Verify compliance with Operator's O&M Manual and Part 192 requirements.				No anomaly repair work currently being done
Verify that Operator's procedures were followed in locating and exposing the anomaly (e.g. any required pressure reductions, line location, identifying approximate location of anomaly for excavation, excavation, coating removal).				
Verify that procedures were followed in measuring the anomaly, determining the severity of the anomaly, and determining remaining strength of the pipe. Review the class location factor and failure pressure ratio used by Operator in determining repair of anomaly.				Cathodic Protection readings of pipe to soil at dig site (if available):
Verify that Operator's personnel have access to and knowledge of applicable procedures.				On Potential: _____ mV Off Potential: _____ mV
Other:				<i>[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]</i>
2B. Remediation - Implementation	Satisfactory	Unsatisfactory	N/C	Notes:
Verify that the operator has adequately implemented its remediation process and procedures to effectively remediate conditions identified through integrity assessments or information analysis.	x			
If documentation is available, verify that repairs were completed in accordance with the operator's prioritized schedule and within the time frames allowed in §192.933(d).				Ground gouge out and installed Clock spring. Only one anomaly had pipe damage. The damage was a dent/gouge which resulted from rock impingement. All other anomalies were coating damage.
Review any documentation for this inspection site for an immediate repair condition (§192.933(d)(1)) where operating pressure was reduced or the pipeline was shutdown. Verify for an immediate repair condition that temporary operating pressure was determined in accordance with the requirements in §192.933(a) or, if not applicable, the operator should provide an engineering basis justifying the amount of pressure reduction.				
Verify that repairs were performed in accordance with §192.103, §192.111, §192.713, §192.717, §192.719, §192.933 and the Operator's O&M Manual, as appropriate. If welding is performed, verify a qualified welding procedure and qualified welders are used to perform repairs. If composite repair methods are used, verify that a method approved by the Operator is used, procedures are followed, and qualified personnel perform the repair.				
Review CP readings at anomaly dig site, if possible. (See Part 4 of this form – "Field Inspection to Verify adequacy of the Cathodic Protection System", as appropriate.				Cathodic Protection readings of pipe to soil at dig site (if available):

Other:

On Potential: _____ mV
Off Potential: _____ mV

[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]

Part 3 - Preventive and Mitigative Actions

3A. P&M Measures for Third Party Damage	Satisfactory	Unsatisfactory	N/C	Notes:
Identify additional measures evaluated for the HCA section of the pipeline and facilities.	x			More frequent patrols at HCA's, On site inspection required during construction work near proximity of the pipeline.
Verify that P & M measures regarding threats due to third party damage are being implemented: [§192.915(c), §192.935(b)(1)(iv)]:				
Confirm the use of qualified personnel for marking, locating, and direct supervision of known excavation work, as appropriate.				
Confirm the use of qualified personnel for monitoring of excavations conducted on covered pipeline segments by pipeline personnel, as appropriate.				
Other:				
<i>[Note: Add location specific information, as appropriate.]</i>				
3B. Installed Automatic Shut-off Valves (Protocol H.07)	Satisfactory	Unsatisfactory	N/C	Notes:
Verify additional preventive and mitigative actions implemented by Operator.	x			Not done, about three miles of pipe is affected
Document that additional measures evaluated by the operator cover alternatives such as, installing Automatic Shut-off Valves or Remote Control Valves, installing computerized monitoring and leak detection systems, replacing pipe segments with pipe of heavier wall thickness, providing additional training to personnel on response procedures, conducting drills with local emergency responders and implementing additional inspection and maintenance programs, as appropriate				
Verify that the operator has a process to decide if automatic shut-off valves or remote control valves represent an efficient means of adding protection to potentially affected high consequence areas. [§192.935(c)]				
Verify operation of installed remote control valve by reviewing operator inspection/remote control records for partially opening and closing the valve, as appropriate.				
Other:				
<i>[Note: Add location specific information, as appropriate.]</i>				

Part 4 - Field Investigations (Additional Activities as appropriate)

4A. Field Inspection for Verification of HCA Locations				Satisfactory	Unsatisfactory	N/C	Notes: HCA s evaluated with data collected during patrols <i>[Note: Add location specific information, as appropriate.]</i>
Review HCAs locations as identified by the Operator. Utilize NPMS and Operator maps, as appropriate.				x			
Verify that the operator's integrity management program includes accurate and updated system maps or other suitably detailed means documenting the pipeline segment locations that are located in high consequence areas, as appropriate. [§192.905(a)]							
Review the operator's applicable procedures and forms used to document new information from one-calls, surveys, aerial & ground patrols are being completed by field personnel to communicate new developments that may impact high consequence areas or that may create new high consequence areas to IM personnel, as appropriate. [§192.905(c)]							
Review the operator's applicable procedures and forms to confirm that new HCAs and class location changes are being identified through it's continuing surveillance program as required by §192.613 and §192.905.							
4B. Field Inspection for Verification of Anomaly Digs				Satisfactory	Unsatisfactory	N/C	Notes: No ILI performed <i>[Note: Add location specific information, as appropriate.]</i>
Verify repair areas, ILI verification sites, etc.						x	
Document the anomaly dig sites observed and reviewed as part of this field activity and the actions taken by the operator.							
4C. Field Inspection to Verify adequacy of the Cathodic Protection System				Satisfactory	Unsatisfactory	N/C	Notes: No hydrotesting performed Cathodic Protection readings of pipe to soil at dig site (if available): On Potential: _____ mV Off Potential: _____ mV <i>[Note: Add location specific information and note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]</i>
In case of hydrostatic pressure testing, Cathodic Protection (CP) systems must be evaluated for general adequacy.						x	
The operator should review the CP system performance in conjunction with a hydrostatic pressure test to ensure the integrity assessment addressed applicable threats to the integrity of the pipeline. Has the operator reviewed the CP system performance in conjunction with the hydrostatic pressure test?							
Review records of CP readings from CIS and/or annual survey to ensure minimum code requirements are being met, if available.							
Review results of random field CP readings performed during this activity to ensure minimum code requirements are being met, if possible. Perform random rectifier checks during this activity and ensure rectifiers are operating correctly, if possible.							
4D. Field inspection for general system characteristics				Satisfactory	Unsatisfactory	N/C	Pipe appeared in good shape, one pipe anomaly noted and probably resulted from original construction. All other anomalies were coating damage anomalies.
Through field inspection determine overall condition of pipeline and associated facilities for a general estimation of the effectiveness of the operator's IMP implementation.				x			
Evaluate condition of the ROW of inspection site to ensure minimum code requirements are being met, as appropriate.							
Comment on Operator's apparent commitment to the integrity and safe operation of their system, as appropriate.							
Check ROW for pipeline markers in line-of-sight and Emergency call-in number on marker posts.							
Other:							

Anomaly Evaluation Report *(to be completed as appropriate)*

Pipeline System and Line Pipe Information		
Operator (OpID and System Name): 22189		
Unit ID (Pipeline Name) King County East		
Pipe Manufacturer and Year: 1968	Seam Type and Orientation:	
Pipe Nominal OD (inch): 16-inch	Depth of Cover:	
Pipe Nominal Wall thickness (inch): .219-inch	Coating Type and Condition: coal tar	
Grade of Pipe: x-42	MAOP: 306 psig	
ILI Reported Information N/A		
ILI Technology (e.g., Vendor, Tools):		
Anomaly Type (e.g., Mechanical, Metal Loss):		
Is anomaly in a segment that can affect an HCA? (Yes / No)		
Date of Tool Run (MM/DD/YY):	Date of Inspection Report (MM/DD/YY):	
Date of "Discovery of Anomaly" (MM/DD/YY):		
Type of "Condition" (e.g.; Immediate; 60-day; 180-day):		
Anomaly Feature (Int/Ext):	Orientation (O'clock position):	
Anomaly Details: Length (in):	Width (in):	Depth (in):
Anomaly Log Distance (ft):	Distance from Upstream weld (ft):	
Length of joint(s) of pipe in which anomaly is identified (ft):		
Anomaly Dig Site Information Summary N/A		
Date of Anomaly Dig (MM/DD/YY):		
Location Information (describe or attach map):		
Mile Post Number:	Distance from A/G Reference (ft):	
Distance from Upstream weld (ft):		
GPS Readings (if available) Longitude:	Latitude:	
Anomaly Feature (Int/Ext):	Orientation:	
Length of joint of pipe in which anomaly is found (ft):		
For Mechanical Damage Anomaly		
Damage Type (e.g., original construction, plain dent, gouge): Rock dent		
Length (in): 3.5-inch	Width (in): 2.5-inch	Depth (in): .187-inch
Near a weld? (Yes / No): No		
Gouge or metal loss associated with dent? (Yes / No): No Are multiple dents present? (Yes / No): No		
Did operator perform additional NDE to evaluate presence of cracks in dent? (Yes / No): Yes		
Cracks associated with dent? (Yes / No): No		
For Corrosion Metal Loss Anomaly N/A		
Anomaly Type (e.g., pitting, general):		
Length (in):	Width (in):	Max. Depth (in):
Remaining minimum wall thickness (in):	Maximum % Wall Loss measurement(%):	
Safe pressure calculation (psi), as appropriate:		
For "Other Types" of Anomalies N/A		
Describe anomaly (e.g., dent with metal loss, crack, seam defect, SCC):		
Length (in):	Width (in):	Max. Depth (in):
Other Information, as appropriate:		
Did operator perform additional NDE to evaluate presence of cracks? (Yes / No):		
Cracks present? (Yes / No):		

Anomaly Repair Report *(to be completed as appropriate)*

Repair Information		
Was a repair of the anomaly made? (Yes / No): Yes		
Was Operating Pressure Reduced per 192.933(a) requirements? N/A		
Was defect ground out to eliminate need for repair? (Yes / No): No		
If grinding used, complete the following for affected area: N/A		
Length (in):	Width (in):	Depth (in):
If NO repair of an anomaly for which RSTRENG/B31.G is applicable, were the Operator's RSTRENG/B31.G calculations reviewed? (Yes / No): N/A		
If Repair made, complete the following:		
Repair Type (e.g., Type B-sleeve, composite wrap) Clock spring		
Was defect ground out prior to making repair? (Yes / No): N/A		
Operating Pressure at the time of repair: reduced from 306 psig		
Length of Repair:	Pipe re-coating material used:	
Comments on Repair material, as appropriate (e.g., grade of steel, wall thickness):		
Comments on Repair procedure, as appropriate (e.g., welded sleeve, composite wrap): Clock Spring		
General Observations and Comments N/A		
Was a diagram (e.g., corrosion map) of the anomaly made? (Yes / No):		(Include in report if available)
Were pipe-to-soil cathodic protection readings taken? (Yes / No):		
If CP readings taken, Record: On Potential: _____ mV; Off Potential: _____ mV		
<i>[Note: Note whether CP readings were from the surface or from the pipe following exposure, as appropriate.]</i>		
Describe method used by Operator to locate anomaly (as appropriate):		
DCVG, Close interval survey		
Comments regarding procedures followed during excavation, repair of anomaly, and backfill (as appropriate):		
Sand bedding, clock spring repair		
General Observations and Comments <i>(Note: attach photographs, sketches, etc., as appropriate):</i>		