BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Adopt New Safety and Reliability Regulations for Natural Gas Transmission and Distribution Pipelines and Related Ratemaking Mechanisms.	Rulemaking 11-02-019 (Filed February 24, 2011)

OPERATOR SAFETY PLAN AMENDMENT OF GILL RANCH STORAGE, LLC

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Pursuant to the July 20, 2012 Ruling of the Assigned Commissioner Setting Schedule for Comments on Safety Plans, Granting Unopposed Motion to Move Exhibit Into Record, and Adopting Procedures for Commission Consideration of Request to Lift Operating Pressure Limitations on Line 131-30 ("Ruling"), Gill Ranch Storage, LLC ("GRS"), operator of the Gill Ranch Storage Project, submits this amendment to the Operator Safety Plan GRS filed with the California Public Utilities Commission on June 29, 2012. This filing addresses the issues raised in the Ruling relating to in-line inspections in new Appendix L (attached hereto) to the Transmission Integrity Management Plan component of GRS' Operator Safety Plan.

DATED: August 24, 2012 DAY CARTER & MURPHY LLP

By: /s/ Ann L. Trowbridge

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ATTACHMENT

Appendix L – In-line Inspection Assessment Guidance

1. Introduction

GRS executive management has designated the GRS IMG as the lead for developing and executing all in-line pipeline integrity inspection(s). GRS executive management expects that all pipeline integrity assessments provide an accurate and verifiable condition of the pipeline or pipe segment being inspected.

The GRS IMG team consists of company personnel and may include third party experts; each of which contributes their specialized knowledge and experience in one or more pipeline safety disciplines including (but not limited to) pipeline design, construction, operations, inspection and testing, integrity management, health and safety, environmental or regulatory compliance expertise. The primary objective of the GRS IMG is to assure that GRS pipelines are safe to operate and compliant with the CPUC/DOT Pipeline Integrity Management Rule.

GRS executive management requires close cooperation and clear communications between the GRS IMG, other GRS personnel and ILI Vendors (Contractors). The GRS executive management team and the IMG recognizes that one of the most important aspects to conducting a successful in-line pipeline integrity assessment lies in how effective the communication and co-operation is between GRS IMG and its ILI Vendor (Contractor). This communication and co-operation must span the entire in-line inspection project cycle including:

1. Effective planning including, but not limited to company and contractor responsibilities.
2. The identification of specific features (e.g., anomalies) that require detection, quantification or monitoring, and then selecting the appropriate tool or technology best suited for the inspection task and environmental condition.
3. Identification of ILI System Performance Specifications and Data Quality Requirements.
4. Method(s) for identifying and remediating any conditions that may have a negative impact on the outcome of the ILI, including but not limited to line conditions, product availability (volume, flow rate, etc.) and scheduling.
5. Confirmation / verification that an ILI system is prepared to be run within the defined Performance Specifications.
6. Running the ILI System and conducting a post-run assessment of the ILI run to assure that the necessary data was collected and that the Data Integrity is intact.
7. Analyzing the ILI system data and determining the integrity status of the pipeline / segment.
8. Identifying those features (e.g., anomalies) that require Immediate and/or Scheduled repairs or are classified as a monitored condition.
9. Determination of number and location of confirmatory digs and/or mitigation actions.

10. Completing all remediation and/or mitigation actions as defined in the final ILI System Report.
11. Completion of all documentation and notifications.

2. Expectations

GRS executive management has charged the GRS IMG to ensure that:

2.1. All in-line inspections are designed and executed in accordance with all pipeline safety regulatory requirements (e.g., DOT, CPUC), industry standards incorporated by reference, as well as industry best practices (as applicable).

2.2. All decisions have a sound technical basis, sound engineering practices and judgment, sound operational practices and judgment and have the acceptance and approval of the IMG.

2.3. An adequate number of field assessments of anomalies / features are completed to assure the validity of the integrity assessment. In most cases this will require additional excavations (beyond the minimum regulatory requirements) of anomalies and / or potential anomalies to assure the validity of the integrity assessment. The specific number of additional field assessments (e.g., digs) shall be defined during the system results phase of the in-line inspection. The goal is to assure that the GRS minimums for ILI anomaly identification, evaluation, classification, and verification meet or exceed current minimum regulatory requirements and provide a higher level of confidence in the pipelines integrity.

3. Responsibility

3.1. The GRS IMG is responsible for all matters relating to pipeline integrity management, including In-line-Inspections.

3.2. The GRS IMG shall not outsource its judgment to any contractor on pipeline integrity matters. The contractor does have the responsibility to identify in-line inspection system capabilities, their proper use, and application.

3.3. The GRS IMG is ultimately responsible for the:

3.3.1 Identification of specific risks (threats) to be investigated.
3.3.2 Choosing the proper inspection technology.
3.3.3 Maintaining operating conditions (during the ILI) within tool run specifications.
3.3.4 Confirming the inspection results.
3.3.5 Completing all repairs (immediate and scheduled), confirmatory digs, establishing protocols for monitored conditions and assuring the pipeline integrity in accordance with DOT / CPUC regulatory requirements.

3.4. The GRS IMG is responsible for assuring that the ILI is conducted in accordance with CPUC regulatory requirements and with the GRS TIMP and ILI Plan.

3.5. The GRS IMG is responsible for establishing and maintaining open communications with the ILI Vendor (Contractor).

3.6. The GRS IMG is responsible for assuring that all ILI contractors understand their roles and responsibilities in conducting In-line-Inspections on GRS pipelines.

4. The ILI Vendor (Contractor) Responsibilities

4.1. ILI Vendors (Contractors) shall receive from the GRS IMG:

4.1.1 Clear and well defined inspection goals and objectives.

4.1.2 Complete and accurate pipeline system characteristics (e.g. pipeline geometry, right-of-way conditions and limitations, and threats to be assessed).

4.2. ILI Vendors (Contractors) shall:

4.2.1 Possess the knowledge, experience and skill to recommend to the GRS IMG the specific in-line-inspection tool to meet the GRS IMG integrity assessment requirements.

4.2.2 Provide qualified personnel to run the ILI tool, and verifying of the ILI data quality.

4.2.3 Provide qualified personnel to analyze the data and grade anomalies (e.g. Immediate Repair, Scheduled Repair or a Monitored Condition).

4.2.4 Provide qualified personnel to identify the location(s) of confirmatory digs.

5. Physical and Operational Characteristics and Constraints

5.1. The GRS IMG shall provide the ILI Vendor (Contractor) information on the physical characteristics and constraints of the pipeline system / segment being inspected.

5.1.1 The pipeline characteristics shall be used to assess the compatibility of the in-line inspection system.

5.1.2 Examples of the characteristics that shall be provided include (but are not limited to): pipeline length, length of pipeline segment to be inspected, outside diameter, wall thickness, location and type of valves, bends, known physical restrictions, openings, launchers and receivers, product characteristics, flow rate(s), operating temperature(s) and pressure(s) and internal condition of the pipeline (e.g. cleanliness), flow direction (one way or bi-directional).

5.2. The ILI Contractor (Vendor) shall review the physical and operational characteristics and constraints and provide technical detail and conditions associated with running the selected ILI tool(s). Tool details and constraints may include:

5.2.1 Restrictions on temperature, pressure, minimum bend or elbow radii.

5.2.2 Minimum spacing of bends or elbows to each other.

5.2.3 Maximum and minimum velocities.

5.2.4 Minimum and maximum wall thickness.

5.2.5 Any known product characteristics that would limit or preclude a successful inspection.

5.2.6 Tool weight and overall length.

5.2.7 Special launching and receiving constraints especially for launching and receiving facilities.
5.2.8 Requirements for check valve positions.
5.2.9 Minimum bore requirements and drive cups compression.
5.2.10 Anticipated run length and any limitations on battery life, data storage capacity and/or mechanical wear.

6. Selection of an In-line Inspection Tool

The GRS IMG will look to the ILI Vendor (Contractor) to recommend an in-line inspection system based on the goals and objectives of the GRS IMG. Before making a recommendation, the ILI Vendor shall evaluate and make available to the GRS IMG:

6.1. Expected performance of the in-line inspection system with regard to detection, identification, sizing, locating, and coverage capabilities for the anomalies of interest and pipeline to be inspected.
6.2. Physical characteristics of the in-line inspection tool, including its size, weight, and environmental limitations.
6.3. The ILI Vendor (Contractor) reporting format and level of detail that will be included in the final ILI report.
6.4. Operational reliability of the tool (history, operational success, etc.).
6.5. Performance on other types of anomalies other than those of interest.
6.6. Additional operational constraints.
6.7. If the inspection goals include looking for multiple anomalies or characteristics (e.g., corrosion in dents, cracking with associated corrosion and/or dents, etc.), the ILI Vendor (Contractor) may recommend more than one tool or system that can best assess the overall condition of the pipeline.
6.8. The GRS IMG shall select the appropriate in-line inspection systems that meet the defined goals and objectives. The GRS IMG may select multiple systems that, when used in combination, meet the goals and objectives of the GRS IMG.

7. Qualification of Performance Specifications

The ILI Vendor (Contractor) shall provide the GRS IMG with written performance specifications for the ILI inspection. The ILI Vendor (Contractor) shall use the performance specifications to review the pipeline to be inspected (e.g. the pipelines physical characteristics and constraints) and state whether the chosen in-line inspection system can be run effectively and safely given the ILI Systems performance specifications and existing pipeline operating conditions.

7.1. This specification shall include (at a minimum) the capabilities of the ILI system to detect, locate, identify and size anomalies and characteristics in terms of:
7.1.1 The type of anomaly or characteristic covered by the performance specification.
7.1.2 Detection thresholds and probabilities of detection.
7.1.3 Probabilities of proper anomaly identification.

7.1.4 Sizing or characterization accuracies.
7.1.5 Linear (distance) and orientation measurement accuracies.
7.1.6 ILI data quality and analysis limitations.

7.2. The performance specification shall clearly identify the type(s) of anomalies, components, and characteristics that are to be detected, identified and sized by the ILI System.

7.2.1 Anomaly types include, but are not limited to:

- Metal loss due to corrosion (external / internal), gouges, or grooves.
- Crack-like anomalies, such as stress-corrosion cracking (SCC).
- Seam weld cracks.
- Girth weld cracks.
- Pipe Deformation including dents, pipe ovality, wrinkles / ripples, or buckling.
- Metallurgical including cold working, hard spots or manufacturing anomalies (e.g. laminations, slugs, scabs and slivers).

7.2.2 Components or other features include, but are not limited to:

- Valves, tees, fittings, and casings.
- Other appurtenances, taps, metallic sleeves.
- Girth, seam welds or other end connections (couplings, bell/spigot connection, chill rings).

7.2.3 Characteristics include, but are not limited to:

- Geographic position of the centerline of the pipe.
- Wall thickness and diameter changes.
- Strain.
- Pipe characteristics including manufacturing process (e.g., seamless, DSAW).
- Locations of components or anomalies.

7.3. The performance specification shall identify the detection thresholds and Probabilities Of Detection (POD) that are statistically derived, for each type of anomaly or characteristic covered by the specification. The detection threshold(s) as a function of anomaly type should include, where applicable:

7.3.1 Metal Loss

- Corrosion (external / internal): minimum depth, length, width, and orientation.
- Gouges: minimum depth, length, width, geometry and orientation.

7.3.2 Crack-like anomalies (pipe body or weld). Minimum depth, length, width (opening), orientation, and proximity to other cracks, anomalies, or pipeline components.

7.3.3 Deformation.

- Dents: minimum depth, or reduction in cross-section, or reduction in diameter and orientation.
- Pipe ovality: minimum ovality.

- Wrinkles or “ripples”: minimum height and spacing and orientation.

7.3.4 Metallurgical.

- Cold work: presence of and severity.
- Hard spots: minimum diameter of hard spot and difference in hardness between the hard spot and the base material.
- Manufacturing anomalies (e.g., slugs, scabs, and slivers): minimum dimensions and position.

7.3.5 External Coating faults: minimum dimensions.

7.3.6 Girth Welds, seam welds.

7.3.7 Other anomalies, conditions, or pipeline components as required, dependent on industry standards or practices.

7.4. The performance specification shall clearly state a statistically derived and valid Probability Of Identification(s) (POI/POI’s) for each type of anomaly, components, or characteristics that are detected by an in-line inspection tool.

7.5. The performance specification shall clearly state the sizing accuracies for each type and range of anomalies listed in the specification. The sizing accuracy defines how closely the reported dimensions agree with true dimensions and shall include a tolerance on depth sizing, a certainty and the confidence level.

7.6. The performance specification shall clearly state the sizing capabilities for all other characteristics that have not been defined but are included in the performance specification.

7.7. The performance specification shall clearly define the physical and operational factors / conditions that limit the detection thresholds, POD’s, POI’s, and sizing accuracies, including:

7.7.1 Anomaly orientation angle and proximity to other anomalies or pipeline components.

7.7.2 Anomaly shape and area affected.

7.7.3 Maximum and minimum pipe wall thickness (e.g., within a bend or in a ‘casing’).

7.7.4 In-line inspection system speed outside of the specified range.

7.7.5 Pipeline cleanliness.

7.7.6 Pipe metallurgy.

7.7.7 Pipe curvature, field bends or elbow.

7.7.8 Pipe wall coverage.

7.7.9 Acceptable sensor loss or data degradation from sensor loss.

7.8. The performance specification shall identify the in-line inspection system’s geometric limitations for the pipeline / segment being inspected (straight pipe, bends, and fittings). The specification shall define the minimum inside diameter, maximum wall thickness, minimum bend radius, maximum branch/offtake diameter, minimum required straight pipe length between bends as well as a statement (when applicable) that industry standards manufacturing tolerances were used in specifying these limits.

7.9. All performance specifications shall be qualified by the ILI Vendor (Contractor). The methodology used to qualify these performance specifications shall be based on sound engineering practices, be statistically valid, and include a definition of essential variables for the ILI tool. The methodology used to qualify the performance specification shall be based on at least one of the following methods:

- 7.9.1 Verified historical data,
- 7.9.2 Large-scale tests from real or artificial anomalies, and/or
- 7.9.3 Small-scale tests, modeling, and/or analysis.

7.10. The performance specification shall identify the essential variables for the ILI System being used. These variables shall include the characteristics or analysis steps that are essential for achieving the desired inspection results. Changes to the essential variables of a system shall require a new performance specification and qualification. These variables include, but are not limited to:

- 7.10.1 Constraints on operational characteristics, such as inspection tool velocity.
- 7.10.2 Inspection tool design and physical characteristics such as:
  - Inspection parameters (e.g., magnet strength, magnetization system components and dimensions, ultrasonic frequency, amplitude, and angle).
  - Sizing system components (e.g., sensor type, spacing, and location relative to the source of the inspection energy).
  - Analysis algorithms (e.g., steps used in preprocessing, classification and characterization of signals, interaction rules).

7.11. The data and analysis used to qualify a performance specification shall be in accordance with API 1163-2005 (unless otherwise specified and as applicable).

- 7.11.1 At a minimum, the data and analysis used to qualify a performance specification shall include all essential variables as defined in the specification. Any data or analysis that is not within the range of essential variables of the performance specification shall not be use to qualify the performance specification. If the data indicates the in-line inspection system does not meet the performance specification for any values or combinations of essential variables the essential variables must be redefined, or the performance specification must be restated.
- 7.11.2 Verification measurements (features / anomalies that have been exposed and physically measured) from previous runs of an ILI system may be used to qualify a performance specification.
- 7.11.3 Full-scale tests may be used to qualify a performance specification, provided the tests are correlated / calibrated to field data.
- 7.11.4 Small-scale tests, modeling and analysis may be used to qualify a performance of a system component (e.g. sensor type). These data may be used to qualify a change in a system component and to

extend the range of the essential variable provided they are consistent with historical and full-scale data.

7.11.5 Detection thresholds, PODs, and POIs must be based on historical or full-scale test data. In the absence of a statistically significant amount of historic or full-scale test data is not available, the detection thresholds, PODs, and POIs shall be estimated using prior experience with other inspection systems, provided the estimates are clearly identified as such in the performance specification.

7.11.6 All qualification methods shall be reviewed on an annual basis to ensure its continued validity. The performance specification and qualification method shall be updated as needed.

8. System Operational Validation

8.1. Prior to running an ILI system, the system shall have written and IMG approved project requirements, pre-inspection requirements, inspection requirements, and post-inspection requirements.

9. System Results Verification

9.1. All ILI system inspections shall have their results verified to assure that the inspection results are within the performance specification for the pipeline being inspected.

9.2. The verification process shall require agreement between the GRS IMG and the ILI Vendor (Contractor). The GRS IMG is responsible for working to assure that the ILI system results are reviewed and accepted in accordance with the performance specification and field verified data (e.g. confirmatory digs, immediate or scheduled repairs, historical data from previous pipeline integrity assessments, etc.).

9.3. All discrepancies identified during the verification process must be documented, evaluated and accounted for prior to accepting any inspection results.

9.4. Any disagreement or difference of opinion on the ILI system operational validation, performance specification, and/or systems results verification shall be submitted to the GRS IMG team leader. The GRS IMG team leader shall take the necessary actions to resolve such disagreements. At no time may an anomaly be downgraded in severity (e.g. moved from an immediate repair to a scheduled repair or monitored condition) without a thorough analysis of all data and findings and the necessary technical analysis and/or sound engineering practices. All such disagreements or differences of opinion shall be properly documented (e.g., identification of the issue(s), options, and final decision with the necessary technical and / or engineering detail to support such a decision.

9.5. Inconsistencies discovered during the process validation shall be evaluated and resolved to the satisfaction of the GRS IMG. If the inconsistencies cannot be resolved, the inspection results are not verified. If the inspection results are not verified, the performance specification may be restated or all or parts of the inspection data may be rejected.

9.6. A process validation shall be conducted for all ILI system inspections. This validation shall include a:

9.6.1 Confirmation of the data analysis process,

9.6.2 Comparison of recorded data to previous data or that data used to establish the performance specification, and

9.6.3 Comparison of reported locations and types of components.

9.7. The process validation may include, but is not limited to a:

9.7.1 Review of the pipeline route, geometry, and operating conditions during the inspection relative to those planned for the inspection and the essential variables of the inspection system.

9.7.2 A review of the set-up and operation of the inspection tool relative to that planned for the inspection and the essential variables of the inspection system.

9.7.3 A review of the processes used for:

9.7.3.1 Bulk data handling, conditioning, and filtering.

9.7.3.2 Automated analyses (grading) (if used).

9.7.3.3 Manual or other adjustments of data or grading.

9.7.4 Identification, evaluation, and integration of supplemental data relative to the processes required for compliance with the performance specification.

9.7.5 A review of any additional requirements for the inspection, including any standards or codes applicable to the inspection.

9.7.6 A review of the reported anomaly types and characteristics relative to the data used to establish the performance specification.

9.7.7 A comparison of reported locations and types of pipeline components and equipment, such as above-ground markers, anchors, bends, casings, flanges, girth welds, magnets, pig passage indicators, metal repair sleeves, taps, tees, and valves, relative to actual locations of components and appurtenances.

9.7.8 All reported results shall be compared to prior historical pipeline data (as available and applicable) for the purpose of verifying the ILI system inspection results. This comparison may include the use of:

- Prior in-line inspection results.
- Results from prior excavations and measurements of anomalies similar to those covered by the inspection.
- Other data and analyses, when supported by sound engineering practices.

9.7.9 Prior in-line inspection data can be used to validate the ILI system inspection results provided:

- The differences in reported locations and characteristics of identified anomalies are within the tolerance, certainties and confidence levels stated in the performance specification.

- The differences in the reported locations and characteristics are outside the tolerances stated in the performance specification but the differences can be explained using sound engineering practices (e.g. corrosion growth, tool technology advancements, etc.).

9.7.10 Prior excavation and measurement data can be used to validate the ILI system inspection results provided:

- The data from such excavations and measurements represents the range of reported anomaly types and characteristics and
- Any differences are within the tolerances, certainties and confidence levels stated in the performance specification or can be explained using sound engineering practices.

9.8. When historic information on the pipeline being inspected is not available or the reported results are not verified by the comparisons with historic information, the reported results may be verified through comparisons with prior data from the inspection system being used on other lines supplemented with data from large-scale tests as warranted.

9.9. Verification measurements (confirmatory / verification digs) are required as part of the ILI system results verification process. Any discrepancies between the reported inspection results and verification measurements that are outside of performance specifications shall be documented. The source of the discrepancies should be identified through discussions between the ILI Vendor (Contractor) and the operator and through analyses of essential variables, the dig verification process, and data analysis process. Based on the source and extent of the identified and analyzed discrepancies, one of the following courses of action may be taken:

9.9.1 The inspection data may be reanalyzed taking into account the detailed correlations between anomaly characteristics and the inspection data.

9.9.2 All or part of the inspection results may be invalidated.

9.9.3 The performance specification may be revised for all or part of the inspection results.

9.10. The use of verification measurements requires that a comparison of the reported and measured anomaly characteristics be made to confirm the accuracy of the reported inspection results as compared to the actual measurements of the anomaly. Furthermore, this comparison must be consistent with the performance specification requirements, be statistically valid and be based on sound engineering practice.

9.11. Other methods of evaluating ILI system inspection results may be used if the method(s) are based on sound engineering practices and are statistically valid.

10. Quality Management

10.1. All in-line system inspections shall be reviewed using a quality management system. The quality management review should apply to all activities involved in the design, testing, field operations, data analysis and support services that were part of the in-line inspection assessment project. This system may include, but is not limited to:

10.1.1 Identification of responsible parties by job responsibility or task.

10.1.2 A review and acceptance of all procedures used in the in-line inspection project.

10.1.3 A review and acceptance of the ILI Vendor (Contractors) qualifications (e.g., ASNT ILI-PQ), tool(s) and other equipment and/or services provided.

10.1.4 A review of the gauge pig run and/or other data to assure that the in-line inspection tool will have free passage.

10.1.5 Confirmation that the inspection capabilities of the in-line inspection tool meet the specific objectives of the GRS IMG.

10.1.6 Confirmation that the in-line inspection tool was calibrated prior to the tool run.

10.1.7 Confirmation that the data, evaluation methods, and data analysis results meet the requirements of the GRS IMG. This includes the use of any regulatory requirements and/or industry standards.

10.1.8 Confirmation that the GRS IMG has received accurate and complete reports from the ILI Vendor (Contractor).

11. Report Contents

11.1. A final report on the ILI and its findings, recommendations and results shall be published, undergo a quality management review and be accepted by the GRS IMG.

11.2. GRS executive management shall (when applicable) be presented with the findings, recommendations and corrective actions as part of the GRS Safety Management System Review. See the GRS Safety Management System Annual Review for more information on this process.

11.3. All in-line system inspection reports may include the following information:

11.3.1 Executive Summary including, but not limited to the name of the company conducting the survey, survey date(s), qualification of survey and personnel analyzing and interpreting results (including grading anomalies), pipeline parameters (manufacturing method, O.D., nominal wall thickness, pipe grade, line length, etc.) and any observations that, while exceeding the reporting requirements (based on the in-line inspection systems performance specification) could be of interest to GRS.

11.3.2 In-Line Inspection Data Quality including a discussion of any quality issues associated with sensor malfunctions, data point correlation, data quality or integrity, etc.

11.3.3 Data analysis parameters including minimum measurement thresholds, reporting thresholds, anomaly classification, etc.

11.3.4 Inspection Results including, but not limited to: odometer distance (or absolute distance), identification of upstream girth weld, distance from feature to upstream girth weld, 3 up + 3 downstream joint lengths, feature classification (e.g., anomaly, component, non-relevant indication), circumferential position, identification of upstream and downstream markers, tool speed, feature characterization (e.g., meal-loss features (corrosion, gouges with depth or depth range and length), deformation features (e.g., dents, buckles, ovality, ripples, wrinkles with depth or reduction in cross-section, length, width), crack features (e.g., individual cracks, colonies of cracks, weld cracks with depth or depth range and length), metallurgical features (including dimensions and position through the wall, hardness.

11.3.5 Inspection survey parameters including any differences between the essential variables listed in the performance specification that is different from the in-line inspection results.

11.4. Data tables and plots may include:

11.4.1 A table of all girth welds, joint lengths, pipeline components, and markers.

11.4.2 Summary and statistical data such as number of internal metal-loss features, number of external metal-loss features, number of metal-loss features with depth reportable to 19%t, number of metal-loss features with depth reportable to 20 -29%t, number of metal-loss features with depth reportable to 30 -39%t, number of metal-loss features with depth reportable to 40 -49%t, number of metal-loss features with depth reportable to 50 -59%t, number of metal-loss features with depth reportable to 60 -69%t, number of metal-loss features with depth reportable to 70 -79%t, number of metal-loss features with depth reportable to 80%t.

11.4.3 Number of metal-loss features may be included; by defined section with separate tables for metal-loss features with depth Š 0.4t and Š 0.6t.

11.5. Histograms of range of data scatter may be included; for each type of anomaly, based on the statistical data obtained from the inspection.

11.6. Circumferential position plots may be included for all: (1) metal-loss features over the full pipeline length, (2) internal metal-loss features over the full pipeline length, (3) metal-loss features over the full pipeline length, (4) metal-loss features as a function of the relative distance to the closest girth weld and (5) deformation features over the full pipeline length.

11.7. Pressure-based assessments of metal loss anomalies or cracks and strain calculations for deformations may be included; with the assessment methodology, severity ration and definition, and pipeline parameters.