

12-L Analysis of Predicted Failure Pressure

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1.0 SCOPE

This chapter describes requirements for performing analysis for anomalies or defects of steel transmission pipelines to determine the predicted failure pressure at the location of the anomaly or defect.

2.0 REGULATORY REFERENCES

49 CFR Part 192 §§ [192.3](#), [192.18](#), [192.607](#), [192.712](#)

3.0 PROCEDURE

3.1 Analysis of Predicted Failure Pressure [[192.18](#)] [[192.607](#)] [[192.712](#)]

(a) In accordance with 192, whenever required by code, anomalies or defects of steel transmission pipelines *must* be analyzed to determine the predicted failure pressure at the location of the anomaly or defect, and the remaining life of the *pipeline* segment at the location of the anomaly or defect, in accordance with 192.712. Anomalies and defects, as defined by 192.712 include the following:

- 1) Corrosion metal loss
- 2) Cracks and crack-like defects
- 3) Cracks that survive pressure testing

(b) When performing the analyses of predicted or assumed anomalies or defects the collected data must be used as required by 192.712(e).

(c) Analyses conducted in accordance with 192.712 must be reviewed and confirmed by a subject matter expert (SME).

(d) Records *shall* be kept for the life of the pipeline documenting investigations, analyses, and other actions taken in accordance with the requirements of [192.712](#).

Records must document justifications, deviations, and determinations made for the following, as applicable:

- (1) The technical approach used for the analysis;
- (2) All data used and analyzed;
- (3) Pipe and weld properties;
- (4) Procedures used;
- (5) Evaluation methodology used;
- (6) Models used;
- (7) Direct in situ examination data;
- (8) In-line inspection tool run information evaluated, including any multiple in-line inspection tool runs;
- (9) Pressure test data and results;
- (10) In-the-ditch assessments;
- (11) All measurement tool, assessment, and evaluation accuracy specifications and tolerances used in technical and operational results;
- (12) All finite element analysis results;
- (13) The number of pressure cycles to failure, the equivalent number of annual pressure cycles, and the pressure cycle counting method;
- (14) The predicted fatigue life and predicted failure pressure from the required fatigue life models and fracture mechanics evaluation methods;
- (15) Safety factors used for fatigue life and/or predicted failure pressure calculations;
- (16) Reassessment time interval and safety factors;
- (17) The date of the review;
- (18) Confirmation of the results by qualified technical SMEs; and
- (19) Approval by responsible operator management personnel.

4.0 TRAINING/QUALIFICATIONS

None at this time

5.0 DOCUMENTATION/FORMS

None at this time

6.0 RELATED DOCUMENTS

None at this time.

7.0 APPENDICES

- [Analysis of Predicted Failure Pressure \(§192.712\) AG-OM-M-020-002](#) (PDF file)

(UNCONTROLLED IF PRINTED)