

# Direct Assessment

March 14, 2002

Marriott, Washington DC

Alan Eastman, PG&E

# Presentation Overview

- General Comments on DA (ECDA, ICDA, SCC DA, and CDA)
- Necessary enhancements to the NPRM regarding ECDA, ICDA, SCC DA.
- Understanding of the Confirmatory Direct Assessment Process
- Draft comparison of DA language in NPRM, ASME B31.8S, and NACE ECDA RP

# General Comments on Direct Assessment

- ◆ DA processes are pivotal in assessing the integrity of pipelines that would otherwise require an unacceptable impact to customers and the environment to use other assessment methodologies
- ◆ The baseline time period and the reassessment intervals for DA must align with the other assessment methods
- ◆ Remediation provisions for the DA methods must be consistent with the general remediation methods in the NPRM

# General Comments on Direct Assessment, Cont.

- ◆ Terminology for the DA methods should be consistent with terminology used in ASME B31.8S and associated NACE Standards
- ◆ DA Research is continuing and will address any gaps and issues that may exist. Federal and state regulators are welcome to participate to learn more about DA
- ◆ Standard development is underway to institutionalize the research and practices

# External Corrosion Direct Assessment (ECDA)

- ◆ The rule should, to the degree practical, reference NACE standard RP0502-2002, “Pipeline External Corrosion Direct Assessment Methodology”
- ◆ All ECDA wording in the NPRM should, to the degree practical, be removed
- ◆ The baseline assessment period and the reassessment interval must be consistent with other assessment methods including the Confirmatory Direct Assessment Process
- ◆ ASME B31.8S is presently being modified to reference RP0502-2002

# Internal Corrosion Direct Assessment (ICDA)

- ◆ The ICDA research is underway and the Standard is being developed by NACE TG293
  - ◆ The scope of this effort is to develop a structured process to conduct the ICDA process for dry & wet systems
  - ◆ Much like the ECDA process, the ICDA process will involve key process steps (pre-assessment, indirect examination, direct examination, and post assessment) to ensure thoroughness, consistency, and quality
  - ◆ The standard will provide operators guidance on where and under what conditions Internal Corrosion may exist as well as guidance on assessment methods
- ◆ ASME B31.8S will be modified to reference this new standard when it is published

# Stress Corrosion Cracking Direct Assessment (SCCDA )

- ◆ NACE Task Group 273 is presently developing a standard that will address the SCCDA method.
  - ◆ The scope of this effort is to develop a structured process to assess the risk and reduce the impact of SCC on pipeline integrity
  - ◆ The standard will provide operators guidance on conditions where SCC may exist as well as guidance on assessment methods and their usage and limitations
- ◆ ASME B31.8S will be modified to reference this new standard when it is published

# Confirmatory Direct Assessment (CDA)

- ◆ Pipeline Industry supports CDA as a process to be used for reassessments
- ◆ The methodology will add value to baseline and other assessments thereby further enhancing pipeline integrity
- ◆ The CDA process elements will follow the present DA process elements
- ◆ It is anticipated that the CDA methodology will be imbedded in the ASME B31.8S code as an appendix
- ◆ CDA is consistent with existing ASME B31.8S requirements



# Summary

- ◆ DA processes are essential ingredients of an operators' Integrity Assessment Plan
- ◆ The NPRM language will effectively guide Operators on the use of DA, but needs some minor modification and clarification to be consistent with existing consensus standards
- ◆ The CDA process is an essential process for reassessment, and is consistent in approach and philosophy with existing consensus Integrity standards

## NPRM Cross Reference Table (Draft)

NPRM Wording	NACE Standard RP0502-2002 RP Pipeline ECDA	ASME Comparison	Recommendation
<p><b>Plan Requirements In Accordance w/B31.8S:</b> An operator using direct assessment as a primary assessment method must have a plan that complies with the requirements for use of direct assessment in ASME/ANSI B31.8S, section 6.4 and in this section. <b>Reference: 3(h)(1)ii pg. 4319</b></p>	<p>Not Applicable</p>	<p>Section 6.4 as well as SP B2 of B31.8S has general descriptions and requirements of the ECDA process.</p>	<p>NACE, B31.8S and NPRM recognize DA as a primary assessment method.  B31.8S is being revised to reference NACE RP 0502. Therefore NPRM language can remain the same or directly reference the NACE RP 0502.</p>
<p><b>Allowable Threats for DA:</b> <i>Specific threats.</i> An operator may only use direct assessment as a primary assessment method for external corrosion, internal corrosion, and stress corrosion cracking. An operator may use direct assessment as the primary assessment method for third party damage only if no other assessment method is feasible, and the operator uses it in combination with data collection and integration to evaluate the segment's susceptibility to third party damage. <b>Reference: 3(h)(2) pg. 4319</b></p>	<p>For external corrosion, but also mentions that it can identify mechanical damage, SCC, MIC.  Mentions limitations and encourages caution. But is not specific on limitations.  <b>Reference: 1.1.7 &amp; 1.1.8 a pg 1</b></p>	<p>References DA as only appropriate for External and Internal corrosion threats  <b>Reference: 6.3.3 6-6</b></p>	<p>Recommend leaving NPRM language as-is, with the following understanding.  Any of the baseline inspection methodologies can be used to find 3<sup>rd</sup> party damage. However, prevention is the best defense to the 3<sup>rd</sup> party pipeline threat.  NACE is in the process of developing ICDA SCCDA Recommended Practices. B31.8S recognizes ICDA but not SCCDA.  B31.8S does not recognize DA for 3<sup>rd</sup> Party damage. It recognizes that 3<sup>rd</sup> party damage is best handle by prevention rather than assessment.</p>
<p><b>Opening ECDA Requirements:</b> (3) <i>External corrosion direct assessment (ECDA).</i> An operator that uses direct assessment as the primary method to assess external corrosion must follow the requirements in this section and in ASME/ANSI B31.8S, Section 6 and Appendix SP-B. <b>Reference: 3(h)(3) pg. 4319</b></p>	<p>Does not generally reference B31.8S</p>	<p>Section 6.4 as well as SP B2 of B31.8S has general descriptions and requirements of the ECDA process.</p>	<p>B31.8S is being revised to reference NACE RP 0502. Therefore NPRM language can remain the same or directly reference the NACE RP 0502.</p>
<p><b>Plan Requirements:</b> (i) <i>ECDA plan.</i> An operator using External Corrosion Direct Assessment (ECDA) must prepare a plan that includes— <b>Reference: 3(h)(3)(i) pg. 4319</b></p>	<p>Requires documentation of “methods and procedures” for many of the steps <b>Reference: Section 7, pg. 26</b></p>	<p>Requires that the Integrity Management plan to have documentation of each of the steps for Integrity Management <b>Reference: 2.4.1 pg. 2-6</b></p>	<p>This plan requirement sounds like a procedure requirement. This requirement should be extended to all assessment methodologies (ILI, Hydro, etc.)</p>
<p><b>Process Requirement:</b> (A) A process that provides, according to the requirements of this paragraph, for Pre-Assessment, Indirect Examination, Direct Examination, and Post-Assessment. <b>Reference: 3(h)(3)(i)(A) pg. 4319</b></p>	<p>Specifies the process</p>	<p>Specifies the Process</p>	<p>Leave NPRM language as is.</p>
<p><b>Data Requirements:</b> (B) Data requirements for using ECDA. These must, at a minimum, include the data requirements for external corrosion specified in Appendix SP-A1 to ASME/ ANSI B31.8S. <b>Reference: 3(h)(3)(i)(B) pg. 4319</b></p>	<p>Requires all the same data elements specified B31.8S except for: “Years with adequate cathodic protection” “Years with questionable cathodic protection” <b>Reference: Table 1, pg. 8-11</b></p>		<p>Leave the NPRM language as is.</p>