2020 – March 4 – Editorial Section
Approved additions and revisions to guide material under §192.925. Ready for LB.

PRIMARY: 192.925
PURPOSE: Review existing GM and revise as appropriate to address the excavation vs. examination issues in 192.925 GM 5.2 including Tables 192.925ii and 192.925iii.
ORIGIN/RATIONALE: 2019 - July 9 – Design Task Group minutes
RESPONSIBLE GROUP: Integrity Management/Corrosion Task Group

Section 192.925

5 DIRECT EXAMINATION STEP
(a) ...
(b) ...

5.1 Prioritizing classified indications.
(a) – (d) ...

5.2 Determining the number of direct examinations.
(a) Factors. The following factors determine the minimum number of excavations/direct examinations required.
(1) Location and number of HCAs.
(2) Location and number of ECDA regions.
(3) Number and priority of indications (e.g., immediate, scheduled, monitored).
(4) First-time application of ECDA.
(5) Required process validation (i.e., validation digs).
(b) HCA considerations. In determining the number of direct examinations (digs), the requirements of NACE 5.10 may be combined with the requirement of §192.925(b)(3)(i). For example, an operator may choose to perform one or more additional direct examination(s) to meet the requirements for first-time application of ECDA on a covered segment.
(c) No indications. When there are no indications identified during the application of the ECDA, NACE 5.10.1 requires the operator to determine the ECDA region most susceptible to external corrosion from information derived in the pre-assessment step and select an excavation site within that region to perform this direct examination. The following factors from the pre-assessment step should be considered to determine which ECDA region is most susceptible to external corrosion.
(1) – (7) ...
(d) Tables and examples. Tables 192.925ii through 192.925vi and Figure 192.925A can be used to assist in understanding the required number of direct examinations. Each set of examples illustrates different indications and regions as listed for first time and subsequent ECDA applications. In accordance with 5.2(b) above, an operator may choose to perform additional digs above the required minimum to comply with the requirements of §192.925(b)(3)(i).
<table>
<thead>
<tr>
<th>Immediate Action</th>
<th>Scheduled Action</th>
<th>Monitoring</th>
<th>No Identified Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>All indications that are prioritized as immediate require direct examination. (NACE 5.10.2.1)</td>
<td>If no immediate indications in region, then perform [excavations-direct examinations](NACE 5.10.2.2.1) on the 2 most severe scheduled indications in each region. (NACE 5.10.2.2.1)</td>
<td>If an ECDA region contains only monitored indications (i.e., no immediate or scheduled indications), 2 [excavations-direct examinations](NACE 5.10.2.2.1) are required at the indications most likely to have corrosion. (NACE 5.10.2.3.1)</td>
<td>In the region identified as most likely for corrosion, from the Pre-Assessment Step, perform at least 2 [excavations-direct examinations](NACE 5.10.1 and 5.10.1.2) at locations identified as the most likely to have corrosion.</td>
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<tr>
<td>For indications that were reprioritized from immediate to scheduled, follow the scheduled guidelines in the next column. (NACE 5.10.2.1.1)</td>
<td>If an ECDA region contains scheduled indications and 1 or more immediate indications, then perform 2 [excavations-direct examinations](NACE 5.10.2.2.2) on the most severe scheduled indications in the region. (NACE 5.10.2.2.2)</td>
<td>If the results of the [excavation direct examination](NACE 5.10.2.2.3) at a scheduled indication show corrosion that is deeper than 20% of the original wall thickness and that is deeper or more severe than at an immediate indication, then do at least 2 more direct examinations (i.e., the indications with next highest priority). (NACE 5.10.2.2.3)</td>
<td></td>
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</tbody>
</table>

**Process Validation Dig:** Perform at least 2 additional direct examinations on the pipeline segment (NACE 6.4.2.1). The direct examinations shall be conducted at randomly selected locations, one of which is categorized as scheduled (or monitored if no scheduled indications exist) and one in an area where no indication was detected. These digs must occur within an HCA.

*All NACE references are to paragraphs in NACE SP0502-2008.*
TABLE 192.925ii
### NUMBER OF DIRECT EXAMINATIONS REQUIRED BY NACE SP0502
When ECDA is Being Applied a Second or Subsequent Time on the Segment

<table>
<thead>
<tr>
<th>Immediate Action</th>
<th>Scheduled Action</th>
<th>Monitoring</th>
<th>No Identified Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>All indications that are prioritized as immediate require direct examination. (NACE 1 5.10.2.1)</td>
<td>If no immediate indications in region, then perform 1 <strong>excavation-direct examination</strong> on the most severe scheduled indication in the region. (NACE 1 5.10.2.2.1)</td>
<td>If an ECDA region contains only monitored indications (i.e., no immediate or scheduled indications), 1 <strong>excavation direct examination</strong> is required at the indication most likely to have corrosion. (NACE 1 5.10.2.3.1)</td>
<td>In the region identified as most likely for corrosion, from the Pre-Assessment Step, perform at least 1 <strong>excavation-direct examination</strong> at the location identified as the most likely to have corrosion. (NACE 1 5.10.1 &amp; 5.10.1.2)</td>
</tr>
</tbody>
</table>

For indications that were reprioritized from immediate to scheduled, follow the scheduled guidelines in the next column. (NACE 1 5.10.2.1.1)

|                          | If an ECDA region contains scheduled indications and 1 or more immediate indications, then perform 1 **excavation direct examination** on the most severe scheduled indication in the region. (NACE 1 5.10.2.2.2) | If the result of the **excavation direct examination** at a scheduled indication show corrosion that is deeper than 20% of the original wall thickness and that is deeper or more severe than at an immediate indication, then do at least 1 more direct examination (i.e., the indication with next highest priority). (NACE 1 5.10.2.2.3) |

**Process Validation Dig:** Perform at least 1 additional direct examination at a random location within an HCA where no indications were detected in only one region in the segment (NACE 6.4.2).

1 All NACE references are to paragraphs in NACE SP0502-2008.
Following are three examples ...