

TR 21-14 – Rectifier inspections – Amdt 192-128

TR Number	2021-14
Primary Reference	192.465
Purpose	Review and revise as required by Amdt 192-128
Origin/Rationale	Expands 192.465(b)(1) to include what should be inspected during the rectifier inspections. It now allows for either <i>remote or on-site rectifier inspections</i> . After January 1, 2022, each rectifier that is remotely monitored must be visually inspected on site at least once per calendar year, not to exceed 15 months.
Assigned to	IMCorr

Note: Revisions are shown in **yellow highlight** and **red font**.

Section 192.459

3.2 Cathodic shielding.

... See **910.2** of the guide material under §192.465 for further information regarding shielding of current.

Section 192.465

1 METHODS FOR MONITORING CATHODICALLY PROTECTED PIPELINES **[Addendum 2 update]**

- (a) Monitoring requirements of pipeline cathodic protection (CP) systems may be satisfied by on-site, remote, or other testing and inspection methods.
- (b) A rectifier or other cathodic protection device protecting a regulated segment of gathering line could be located outside the limits of the regulated pipe segment.

2 PERIODIC INSPECTION OF CATHODIC PROTECTION RECTIFIERS AND IMPRESSED CURRENT POWER SOURCES (§192.465(b))

- (a) Inspections are needed to confirm adequate amperage and voltage needed to provide for providing cathodic protection and must be conducted 6 times each year at intervals not exceeding 2½ months either on site or remotely (§192.465(b)).
- (b) Beginning January 1, 2022, at At least one annual inspection at intervals not to exceed 15 months must take place physically on site to ensure safe and continued operation of the equipment (§192.465(b)). One of the six bi-monthly inspections may be used for this onsite inspection as long as the timing meets-concurs with the annual physical inspection requirement.

Considerations for the inspection include:

- (1) Visual inspection for physical damage due to vandalism, lightning, wildlife, downed trees, etc.
- (2) Verification of rectifier settings.
- (3) Direct amperage and voltage readings compared to remote device readings.
- (4) Pipe to soil potentials.
- (5) Electric meter readings.
- (6) Documentation that notes conditions observed and follow up expectations for remediation.

(c) Operators using remote rectifier read processes should consider what documentation is necessary to demonstrate compliance. Such remote inspection documentation may include the following.

(1) Facility identification descriptions.

(2) Voltage and amperage reads on designated dates to demonstrate regulatory time frames.

(3) Remarks to provide clarifications, non-typical observations, or follow up required.

2.3 REMEDIAL ACTION TO CORRECT DEFICIENCIES FOUND BY MONITORING

(a) ...

(b) Remedial action is required whenever it is determined that the CP or other installed corrosion control methods are not operating effectively. If remotely read rectifiers indicate potential deficiencies (e.g., voltage/amperage out of acceptable range, loss of power, loss of signal), operators must have procedures to initiate an onsite investigation. (§192.465(d)).

(c) ...

...

3.4 METHODS FOR LOCATING CORROSION AREAS ON UNPROTECTED PIPELINES

(a) Unprotected pipeline ... Historically, electrical-type surveys have been practical and effective on transmission pipelines and other pipelines in rural areas (see 9.10 below). In-line inspection (ILI) ... The use of such surveys will generally be precluded in urban areas by the considerations in 9.10.2 below.

(b) ...

4.5 DETERMINING ACTIVE CORROSION ON UNPROTECTED PIPELINES

4.5.1 Considerations.

4.5.2 Determination.

5.6 NOT ACTIVE" CONTINUING CORROSION ON UNPROTECTED PIPELINES

6.7 CORRECTING ACTIVE CORROSION ON UNPROTECTED PIPELINES

6.7.1 Corrective measures.

6.7.2 Prompt action.

6.7.3 Reference.

7.8 MONITORING OF CATHODICALLY PROTECTED AREAS ON UNPROTECTED PIPELINES (§192.465(a))

7.8.1 "Active" corrosion areas.

See 4.5 and 6.7 above. ...

7.8.2 "Not active" corrosion areas.

See 5.6 above. ...

8.9 MONITORING OF UNPROTECTED PIPELINES (§192.465(e))

9 10 USING ELECTRICAL-TYPE SURVEYS FOR UNPROTECTED PIPELINES

910.1 Methods.

910.2 Applicability

1011 IN-LINE INSPECTION SURVEYS

An increase in the number or severity of corrosion defects discovered during assessments might indicate that remedial action is needed (see [23](#) above). For information about in-line inspection surveys, see Guide Material Appendix G-192-14.

Section 192.941

2.2 Unprotected pipe or cathodically protected pipe where electrical surveys are impractical.

(a) ...

(b) ...

(c) For conditions where electrical-type surveys may be impractical, see [34](#)(b) of the guide material under §192.465.