Technical Seminar for Cathodic Protection to GOGC Design Unit Specialists

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Source of Development, Supplier of Energy
Isolating Spark Gap

Definition (cf. EN 50164)

Component with discharge distance for isolating electrically conductive installation sections (in the event of a lightning strike, the installation sections are temporarily connected conductively as the result of the response of the discharge)
DC decoupling device

Definition (cf. prEN ISO 15589-1)

Equipment that provides a low impedance path for a.c. and high resistance for d.c. (e.g. Polarization cells, capacitors or diode assemblies)
Parameters to be taken into account when selecting a dc-decoupling device

General aspects to be taken into account

- A.c. voltage mitigation effectiveness and respective a.c. corrosion risk mitigation methods
- Resistance to earth of a.c. mitigation electrode
- Influence on cathodic protection operation and monitoring
- Existence of a.c. voltage/current activation threshold
- Ability to withstand and/or conduct surges and lightning overvoltages
- Size of the device
- Maintenance
Parameters to be taken into account when selecting a dc-decoupling device

Electrical parameters

- Capacitance
- Activation a.c. voltage level
- Activation a.c. current level
- Deactivation a.c. voltage level
- Deactivation a.c. current level
- D.c. leakage vs. d.c. voltage or cathodic protection potential of the pipeline
- D.c. leakage ratio to total cathodic protection current consumption of the pipeline
- Max. continuous a.c. current
- Steady-state a.c. current vs. a.c. voltage
- D.c. nominal Voltage range (min.-max.)
- A.c. nominal Voltage range (min.-max.)
Parameters to be taken into account when selecting a dc-decoupling device

Electrical parameters (continued)

- Frequency
- A.c. impedance
- D.c. resistance
- Ability to withstand and/or conduct surges and lightning overvoltages, e.g.:
  - Voltage protection level at surges
  - Transient kA (8/20 μs)
  - Transient kA-nominal impulse discharge current (10/350 μs)
  - A.c. current for 10 s for 50 Hz
  - A.c. current for 0.2 s for 50 Hz
  - A.c. fault current kA
  - A.c. sparkover voltage
  - D.c. sparkover voltage