HITACHI
Inspire the Next

Retractable Grounding Assembly (RGA® 750)

Continuous Lightning Protection Bonding for Floating Roof Tanks

Feature Highlights:

- **Effective**
  Low-impedance bond prevents fires triggered by lightning currents
- **Corrosion Resistant**
  Retractable conductor cable is made of marine-grade aluminium
  - Highly resistant to hydrogen sulfide (H_2S)
  **Tinned copper option available upon request*
- **Factory Pre-Tensioned**
  Reliable Retractability :
  No on-site tensioning required
- **Durable and Low Maintenance**
  - Engineered for years of durability and reliable performance in corrosive environments
  - Requires virtually no upkeep as compared to shunts
- **Standards Conformant**
  - ☑ API 545
  - ☑ NFPA 780
- **Certifications**
  - ☑ ATEX Approved
  - ☑ Patented (US Patent # 7,078,621)

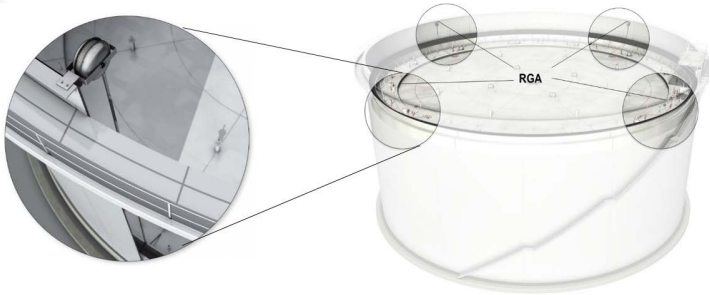
Hitachi Critical Facilities Protection

Benefits of RGA®

- Provides low impedance pathways to safely discharge lightning currents
- Reduces the risk of tank fires by subduing sustained arcs during lightning events and other

The Retractable Grounding Assembly (RGA®) provides direct electrical bonding connection between the floating roof and the tank shell, substantially reducing the risks of lightning-related tank fires.

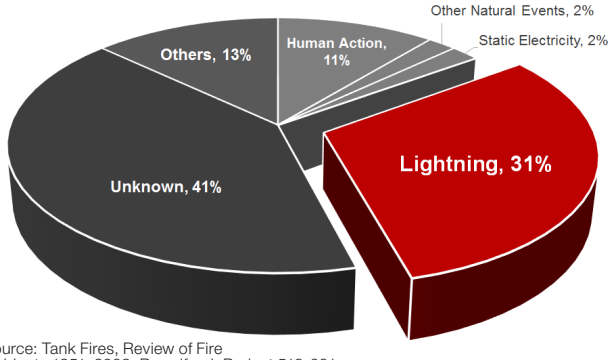
The RGA outperforms other traditional bonding methods as the retractable cable is always at its shortest possible length - resulting in a low resistance and low impedance connection between the tank shell and roof.



Do you know?

Floating Roof Tank Fires are Commonly Caused by Lightning!

Of the 480 tank fire incidents reported in the media, more than 30% has been attributed to Lightning.



Source: Tank Fires, Review of Fire Incidents 1951–2003, Brandforsk Project 513-021

Floating Roof Tanks are especially vulnerable to direct and indirect effects of lightning.

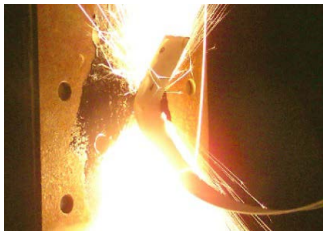
The Limitations of Shunts

Metal strips called “shunts” have been used by the industry to reduce the risks of rim fires - electrically bonding the shell and roof of the tank.

Unfortunately, the bonds established by shunts are unreliable and create a greater risk of sustained arcs:

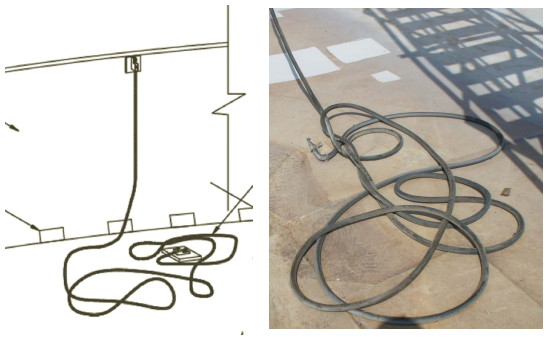
1. Rust, waxy deposits and paint can line the inner wall of the shell, causing an increase in resistance

2. The floating roof can drift slightly off-center and cause the shunts to lose contact from the shell



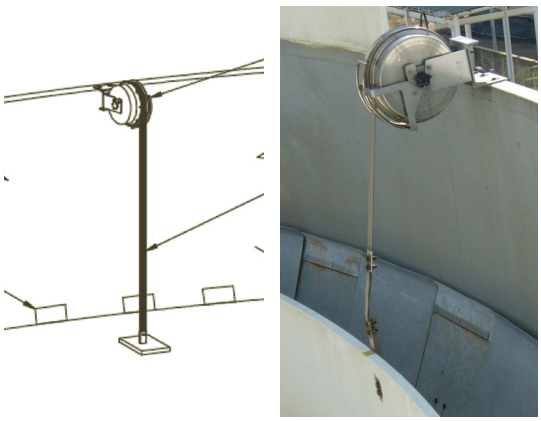
3. API Testing proved that shunts will arc under all conditions, even if the tank wall and shunts are new and clean

Comparison between conventional bypass conductor and RGA



Conventional bypass conductor

When the roof is high, the conductor is randomly coiled upon itself resulting in high impedance.



Retractable bypass conductor

When the roof is high, the conductor is as short as possible, providing the lowest possible impedance between the roof and shell.

When a typical floating roof tank is 80% full, the impedance of the RGA is only 15% that of a conventional bypass conductor.

Hitachi Critical Facilities Protection Pte. Ltd.
31 Loyang Crescent Singapore 509013
T: (+65) 62141830 I F: (+65) 62141831 I W: www.hitachi-cfp.com