High Pressure Release from Sales Gas Meter

What happened?
The control room was notified by an inspection crew of a gas release from a compromised seal in a high-pressure sales gas meter assembly owned and operated by a third party pipeline operator. A 36-minute high pressure gas release resulted, estimated at approximately 793 kg. The asset was shut down with no harm to people or damage to the asset.

What went wrong?
Prior to the gas release, third party pipeline operator technicians doing maintenance work installed Teflon seals and were unaware of a procedure that required use of Viton (or equivalent material) seals.

The immediate cause was likely uneven torqueing of the manifold flange resulting in extrusion of the seal. The installed Teflon seals were out of specification per procedure.

Why did it happen?
Third party pipeline operator technicians and asset personnel were unaware of the asset's procedure for sales gas meter transmitter seal replacement and proper torqueing that were in place.

Skills and knowledge verification did not include these third party pipeline operator technicians. Correct seal installation was not verified.

What areas were identified for improvement?
Evaluate engineering solutions which may reduce or eliminate the hazard of seal failure, including review of new technologies and inherently safer design philosophies.

Previous similar incidents found that improper seal material and torqueing contributed to seal failure in high pressure gas service. Procedures were modified to require use of rapid decompression resistant Viton (or equivalent material) seals instead of Teflon (or equivalent material) seals.

Third party owned equipment and activities on an asset requires interface management and oversight. Personnel should plan and execute work in accordance with requirements agreed in an interface document. Asset interface and oversight requirements will be improved for intrusive activities on third party-owned equipment. This incident demonstrates the need for detail in this document as it related to a specific requirement in a procedure.

What will WE do to prevent this from happening HERE?