

## Risks from HVDC Bushings

SC A2 PS1 Q4

Which requirements are necessary for HVDC converter transformers to do a risk and condition assessment to ensure that they will perform satisfactorily?

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## Risks from HVDC Bushings

Many HVDC transformers have the bushings mounted in the horizontal position, on turrets extending through the wall of the main building. The same also applies to HVDC smoothing reactors used in some older interconnectors. This simplifies the site design and eliminates the need for a through-wall bushing. But, what if the bushing fails...



Group Discussion Meeting

## Risks from HVDC Bushings

An inherent risk with this design is that a bushing failure will lead to uncontrolled loss of oil from the transformer into the building and likely also a major fire, which will be difficult to control or extinguish.

Recommend:

- Eliminating the risk from new HVDC interconnectors by using outdoor transformers with bushings in the vertical position, and wall bushings to connect into the building
- Bushing monitoring on existing HVDC interconnectors where this risk is present. Might not be applicable in all cases, esp. smoothing reactor bushings.
- Dissolved gas monitoring on existing HVDC interconnectors, as progressive bushing failure can likely be detected in this way too.