C37.302-2015
IEEE Guide for Fault Current Limiter (FCL) Testing of FCLs Rated above 1000 V AC

Study Group for Renewal in 2025
Mischa Steurer, Chair
Web-based Meeting, 7 Apr, 2022

Need & Scope

- Need:
  - C37.302-2015 expires 2025
  - IEEE requires renewal of standards every 10 years
- Scope:
  - Shall C37.302 remain a “guide” or shall it become a “Recommended Practice”?
- Notes:
  - In Guide we say “in the past the industry used xyz measure to gauge the effectiveness of a FCL” (or something like that). In RP we have to sue the words “should” or “it is recommended that”. In Standard we would use the word “shall” or “must”.
  - However, all these documents are still essentially the “opinions” of the subject matter experts who wrote it and those who balloted it. And none are legally binding in the US.

Recapture meeting 10/12/2021

- What has changed since 2015?
  - Few FCLs have been developed – where is the technology/market going?
    - Ram Adapa (EPRI): observed low need/demand for FCLs due to renewable energy integration. Why hare fault current levels lower (from solar inverters). Recommends to keep as a guide.
    - Marcus (Mitsubishi Electric): what about urban centers with many new rotating machine based DERs? ConEd is still concerned about fault current levels.
    - Uri (GridOn): still sees demand for FCL technologies in grid
    - Volker (ABB): utility partners in UK demand FCLs that can be re-set remotely as opposed to Is-Limiter
  - Use of C37.302-2015
    - Uri, Ram, Volker (most US customer were not too interested, most interest was in UL), Philip (knowledge about this guide is weak in industry)

Recapture meeting 10/12/2021

- What has changed since 2015?
  - Many more solid state breakers have been developed
    - SSCBs are **inherently fault current limiting** – i.e. could be classified as FCLs
      - No objection from the group
    - No standard exists for testing SSCBs
      - Ram, Uri agrees
  - What about DC?
    - Ram: in favor to include dc (if the guide gets revised)
    - Marcus: offshore wind is of interest
    - Philip: not in favor
    - Jim: common understanding: sources are typically current limiting
      - Ram: some VSCs are not (i.e. the free wheeling diode problem)
      - include dc: Harsha, Jose, Volker (also SSCBs), Zhiyang (also SSCB)
- Other
  - Ir. Fuzz: new FCL technology “Induced current based”; what is the role of FCLs in a software defended substation & automation
  - Leaning towards guide: Ram, Jim, Volker (based on customer acceptance), Uri, Marcus
  - Leaning towards RP: Philip (need to clarify the customer acceptance, is the additional work justified)
- Next steps
  - Get feedback from utilities

Discussion

- Keep it as a guide or upgrading to recommended practice?
  - **Keep it as guide**: Ram, Dvir, Volker, Yang, Tony, Mischa
  - Elevate to recommended practice: none
- Include SSCBs?
  - **Yes**: Ram, Mischa, Dvir, Md, Yang
  - No: Philip
  - Unsure (not specialist in SSCBs): Volker, Tony
- Include DC?
  - Yes: Mischa, Ram, Yang
  - No: Dvir, Volker, Tony
  - Unsure: Md
- Include <1kV (UL standard already exists for FCLs)
  - Yes:
  - **No**: Mischa, Volker, Tony
  - Unsure:

Participants at 4/7/2022 Meeting (self reported via chat)

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