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Stone Less Drop Out Fuse (SLDO) with FRP Base Channel

Title of the Research: Stone Less Drop Out Fuse (SLDO) with FRP Base Channel

Present System:

- DO Fuse is plays a main role in the power distribution network for safety of transformer and electric lines.
- As per our present practice, our field staff is having a tradition to install and use hanging stone type DO fuses, which esthetically not good.



Limitations of the present system: In the hanging stone type conventional 11Kv DO fuse, the contact area is very less, hence, sometimes glowing of lights are being observed, resulting in to energy loss as well as blowing of fuses and consequently failure of power thereof. Some line staff connect upper portion of the DO fuse first than fuse link connect with the lower portion of DO fuse at that time if person have a not giving a proper concentration than some times its live fuse link touch with the DO Fuse base angel/ channel. So live system goes in to earth fault. Mainly in industries and AG areas, unskilled labour are doing this kind of work, they are not waiting for the DISOM staff. So chances of interruption of increases. Also line staff uses the stone for the DO fuse connection. So appearance of transformer is not good. Also some times during work and sometimes stone is fall and damage the transformer bushing and person also.

Detail report of Innovation/solution: The medium voltage combination of 11 KV stone less DO Fuse with FRP Base Channel has the specific applications and would be more beneficial than existing equipment's for the various reasons. Equipment have a features for "The Drop out fuses are installed on the source side of the transformer to protect it from various faults. The coordination of the low voltage side of the transformer is achieved by these fuses. They make the high-voltage side of the transformer as high load tolerant. The damage caused due to bolted secondary faults can be averted. The continuous current rating must be large enough to prevent early fuse interruption. In contrast to that, the fuse rating must be small enough to ensure utmost security."

**SLDO design is divided in to two parts, which are basically
(1) Stone Less DO Fuse and (2) FRP Base Channel.**



SLDO Without FRP Base



SLDO With FRP Base

Field study report:

- DO Fuse is installed on dated 03.02.2018 at Pramukh Corporate, PDPU Road, under Kudasan Sdn, Gandhinagar Division office and work successful.
- After that sub division engineer and sub-division Line staff operate on regular interval and SLDO works properly till date.

How does new innovation help to overcome Limitations of the present system?

Benefits of SLDO over the present system following:

- Aesthetic look;
- Reduce power interruption;
- Safety of Line and equipment increase;
- Cost Effective Solution;
- Adopt proper operation method by line staff;
- Mechanically rugged design.