



## When a DCB / CSA is used for Isolation the Service/Maintenance/Disable Switch must be switched to Maintenance

### WHAT HAPPENED?

DCB's that function as a circuit breaker and disconnecter require SF6 monitoring when used for an isolation point. At Woodville on 2<sup>nd</sup> March 2020, DCB 142 was being switched to provide the isolation point for line maintenance. The final action was to switch the Service/Maintenance/Disable (SMD) switch to Disable. However, in doing so it brought up a permanent DCB SF6 low and lockout alarm/function. It was also noted that switching between the Service and Maintenance positions generated a momentary SF6 alarm.



### IMMEDIATE ACTION TAKEN

- The outage was cancelled and the DCB was treated as a DCB in distress and checked to confirm SF6 gas was at operating pressure. Once confirmed, the DCB was returned to service.
- Investigation commenced as to why the alarm and lockout had asserted and why this had not occurred on older DCB's or the CSA design.

### ROOT CAUSE

There had been a design change to SF6 monitoring where energized relays monitor the SF6 low and lockout circuits. By switching the SMD switch from Service to Maintenance there is a momentary loss of supply as it changes, but when the SMD is switched to Disable the monitoring relays de-energize and indicate low SF6/lockout. This design will also raise these alarms should the energized relay fail and/or the DC1/2 supplies fail.

Based on this review the original SF6 monitoring design with the DCB and CSA models will not activate an alarm or lockout in the Disable position even when the SCADA alarms remain active i.e. they are not switched to "Not In Service".

A review of the SF6 circuits indicates we have three designs and all of them do function properly when the SMD switch is put in the **Maintenance Position**. The DCB's and CSA's have a LOCK/UNLOCK switch that blocks any signal to operate along with physical padlocking of the operating mechanism. It is safe to set the SMD switch in Maintenance when the DCB or CSA is being used as the isolation point. This has been trialed and verified on a later WDV 142 outage.

### LEARNINGS/ACTIONS

- Work with Tactical Engineering to agree on the version of SF6 monitoring for future DCB/CSA designs
- Regardless of which version ALL DCB's and CSA's when used for the Isolation point shall have the Service/Maintenance/Disable (Remote/Local/Disable) switch put in the Maintenance (Local) position and locking procedures followed, prior to the permit issue.
- Update TP OG 42.02 and AOI's for Maintenance Switching for DCB/CSA's as Isolation Points



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