Single Phase Spur Fusing

INTERIM INSTRUCTION # AMS 2020/002

Document Control			
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STAKEHOLDERS *The following positions shall be consulted if an update or review is required:*	
Manager Asset Services	Works Delivery Managers
Manager Safety and Wellbeing	Field Practices Coordinator
Regional Managers	EPCM Contracts Manager
Asset Managers	

1. OVERVIEW

Rural overhead single phase spur lines with distribution transformers are predominantly protected by a drop out fuse at the start of the spur section. This practice was adopted due to significantly higher cost associated with the alternatives being reclosers and sectionalisers. This document provides an interim instruction on selecting an appropriate fuse for a single phase spur line

2. FUSE TABLE

In selecting fuses for single-phase spur line, the following factors must be taken into consideration:

1. Resulting phase imbalance
2. Coordination with upstream single-phase recloser
3. Number of customer affected by outage over the network geographical area protected by the fuse
4. Low fault level at the end of the spur line

Based on the above consideration, the following table is considered appropriate:

Fuse Size (A)	Total Transformer Capacity on Spur Line (kVA)	
	12.7kV	19.1kV
2.00	25	35
3.15	40	60
5.00	60	95
8.00	100	150
10.00	125	190
16.00	200	305

Where the aggregate transformer capacity along the spur line exceeds the capacity shown in the table, further analysis must be carried out to ensure appropriate action is taken/planned to prevent excessive imbalance from being introduced into the network.

A spreadsheet has been created to help designers perform a quick summation of transformer capacity along a spur line. The spreadsheet will recommend the appropriate fuse as per the above table (DM# 18983011).

3. DUE DATE

This interim instruction is effective on the date it is approved.

4. WITHDRAWAL OF THIS INTERIM INSTRUCTION

This interim instruction will be withdrawn from publication 6 months after the Distribution Design Rules has been aligned and amended.