Safety Notice

Health and Safety Alert Notice 02/05

High voltage distribution equipment: Reyrolle YMV and YMV2 circuit breakers

MANDATORY

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SAFETY ALERT AUTHORISED BY:

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INTRODUCTION

1. THE CONTENTS OF THIS SAFETY ALERT ARE TO SECURE COMPLIANCE WITH THE HEALTH & SAFETY AT WORK ETC ACT 1974.

2. This Safety Alert is for the attention of Commanding Officers, Chief Executives, Heads of Establishment, Property Managers, Defence Lands Agents, Establishment Works Consultants (EWCs), Works Services Managers (WSMs), Authorising Engineers, Authorised Persons and Contractors involved in works for MOD.

3. This Safety Alert is to be read by all persons involved with any works associated with the equipment that is the subject of this Safety Alert.

4. The Property Manager or the appropriate MOD Officer shall arrange for the EWC and WSM to carry out all actions in accordance with this Safety Alert.

5. No work involving expenditure on an MOD account is to be carried out without authority from the Property Manager or the appropriate MOD officer for that location or facility.

6. Any work required as a result of this Safety Alert must be carried out in accordance with MOD Safety Rules and Procedures, as applicable.

7. Defects are to be immediately reported to the Property Manager or appropriate MOD Officer, who must ensure that appropriate operating restrictions on the equipment that is the subject of this Safety Alert are applied.

8. For MOD Establishments occupied by United States Visiting Forces (USVF), the responsibilities of Property Manager, EWC and WSM are jointly held by the USVF and DE(USF). At base level, this jointly managed organisation is to take appropriate action to implement the contents of this Safety Alert. Where this Safety Alert contains procedures which differ significantly from USVF practice, a DE(USF) Code of Practice section will be issued.
REQUIREMENT

9. ACTION ADDRESSEES ARE TO ENSURE THAT THIS INFORMATION IS PASSED TO THEIR PROPERTY MANAGERS OR OTHER RESPONSIBLE OFFICERS WITHOUT DELAY.

10. This Safety Alert applies to all Reyrolle YMV or YMV2 circuit breakers.

11. This safety alert is to be disseminated to all Authorised Persons (Electrical), through the Authorising Engineer (Electrical) as a matter of urgency.

12. The authorised Person (Electrical) should follow the procedure below to establish if any discharge activity is taking place within the switchgear voltage transformer fuse assembly.

13. At each substation a check for audible discharge should be carried out on each panel fitted with a YMV or YMV2 and associated voltage transformer.

   a. If no audible discharge is apparent then the fuse assembly is in no immediate danger of failure, and visual inspection of the fuse assembly can be delayed until the next outage of the panel.

   b. Should continuous audible discharge be heard then the switchgear must be isolated and the fuse assembly removed. A visual inspection is required to determine whether there are signs of, either arcing at the contacting positions or surface contamination of any component part within the VT chamber.

   c. In any instance where the symptoms in b. above are identified the decontamination of all primary insulation within the Voltage Transformer Chamber and replacement of the complete assembly of fuses and support tubes, using the revised arrangement, needs to be carried out.

The kit of parts required comprises:

   • Fuse arrangement Qty 3
   • Support Tube – Red Phase Qty 1
   • Support Tube – Yellow Phase Qty 1
   • Support Tube – Blue Phase Qty 1
   • Dropper Connections Qty 3
   • or Riser Connections Qty 3
   • Location Rod Qty 1
   • Rear Plate (if necessary) Qty 1

14. The Voltage Transformer should not be returned to service until the new parts have been fitted and under no circumstances should the old fuse assembly be left partially inserted to isolate the Voltage Transformer while the panel remains energised.

15. In the event that audible discharge is apparent but no obvious signs of partial discharge activity can be found contact Reyrolle for advice.
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16. If there is any doubt regarding the serviceability of inspected fuse assemblies Reyrolle should be contacted for advice.

BACKGROUND

17. Following the failure of the type YMV Isolatable VT Fuse Arrangement the manufacturer, Reyrolle, has investigated and advised the following.

18. Manufacturing records indicate that there are over 1000 YMV/VMV 2 fuse assemblies currently in service and of which 390 are of the original design incorporating a leaf spring contact with the remainder a later design arrangement with a compression spring operated pin contact. Failures have been reported on just over 1% of units in service, with both of types of fuse contact arrangement being affected.

19. The mechanism for failure is poor fuse contact alignment, leading to partial discharge activity. The discharge activity starts at a very low level yet is sufficient to cause total failure after a number of years in service. The activity results in contamination of the fuse assembly and local insulation, which is the cause of the eventual failure.

20. In 1985 the design of the fuse contact was changed to eliminate time consuming setting operations necessary to obtain correct contact alignment with the voltage transformer primary connector. This was carried out for individual fuse carriers to ensure that fuse assembly was fully operational before despatch from Reyrolle.

21. The revised arrangement does not require this degree of setting up and is considered to be less sensitive to operator error and therefore more suitable for on site assembly.

22. Given the numbers of units in service and the relatively few failures, it is the manufacturers belief that with correct contact alignment and a normal environment, both contact arrangements should give trouble free service.

Further information, if required, may be obtained from the manufacturers at VATECH REYROLLE
Mr Ed Wright,
Telephone: 0191 401 5468,
e-mail: ed.wright@vatechuk.com

END OF SAFETY ALERT