



SAFETY ALERT

Part A.

**Subject: Hawker Siddeley Switchgear Ltd
Eclipse Circuit Breaker – Drive Beam Bearing**

Number: SA 2015/16

DIO Sponsor: Bryan Dunn (Hd E&C), SEE/DIO

Date of issue:
4th December 2015

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This Safety Alert is to be read by:

1. **Authorised Persons (Electrical)**
2. **Authorising Engineer (Electrical)**
3. **DIO Service Managers**
4. **DIO's Maintenance Management Organisations (MMOs)**
5. **Others**

Others who may be affected by the content of this Safety Alert might include:

Site/Regional Health and Safety Advisors, Prime Contractors, Project Managers, Private Finance Initiatives, Public, Private Partnership and other traditionally procured contracts, Site Estate Authority Teams and Property Managers with responsibility for MOD projects and Property Management Works Services (including the legacy work of EWCs/WSMs), Coordinating Authorising Engineers, Heads of Establishments and Top Level Budget Holders,

Summary:-

The loss of a phase on Eclipse circuit breakers was identified during generator synchronisation. The Manufacturer's investigation found that actuator drive beam bearings could become detached due to a manufacturing tolerance issue.

When it takes effect: Immediately

When it is due to expire: When updated or rescinded.

Aim

1. To bring to the attention of appropriate persons an issue regarding the potential for the Eclipse Circuit Breaker to mal operate, that is a potential loss of L1 or L3 phase, and to instigate a data collection exercise to enable suitable remedial measures to be identified.

Introduction

2. Compliance with the contents of this Alert will enable compliance with the Health & Safety at Work etc Act 1974 and its subordinate Regulations.
3. The appropriate MOD officer shall arrange for the Maintenance Management Organisation (MMO) contractor to carry out all actions in accordance with this Alert.
4. Any work required as a result of this Safety Alert must be carried out in accordance with JSP 375 Part 2 Volume 3 – High Risk Activities on the Defence Estate.
5. On MOD Establishments occupied by United States Visiting Forces (USVF) responsibility is jointly held by USVF and DIO(USF). At base level this jointly managed organisation is to take appropriate action to implement the contents of this Alert. Where this Alert contains procedures which differ significantly from USVF practice, DIO (USF) code of practice will be issued.

Requirement

Part A.

6. The MMO's Authorised Person (Electrical) and Authorising Engineer (Electrical) are to establish if Hawker Siddeley Switchgear Eclipse Circuit Breakers manufactured between January 2009 and November 2014 are installed on any sites they are responsible for. If found, the location, quantity, serial number of each unit, date of manufacture, and if known, number of operations for each circuit breaker, are to be established and recorded.
7. The MMO is to notify the DIO Service Delivery Performance Management Team, DIO SD-Perf Mgt Team (MULTIUSER) account, through their respective DIO Service Manager identifying the location, quantity, date of manufacture and if available, number of operations for each circuit breaker for all installed Eclipse Circuit Breakers manufactured by Hawker Siddeley Switchgear Ltd. **A nil return is required for Establishments where this switchgear is not installed.**
8. The requested data is required by the 8th January 2016 and will be reviewed on 11th January 2016.
9. A Hawker Siddeley Switchgear Service Procedure exists to overcome the problem and further information will follow on how this could be implemented with the issue of **Part B** to this Safety Alert once the extent and scope of the affected estate has been established.

Background

10. An Eclipse circuit breaker was reported to have experienced a mal-operation at site, "loss of phase L1" in May 2014. During the ensuing investigation it was confirmed that one of the main drive beam bearings had become dislodged. A full investigation was carried out together with a review of the standard operational procedures.
11. The circuit breaker drive beam bearings are secured in place within the drive beam moulding by the use of an interference fit of the bearing in the drive beam requiring it to be pressed in place. Loctite bearing retention fluid was also used to secure the bearings.
12. To date, Hawker Siddeley Switchgear Ltd has recorded a further 13 instances of this issue, all exhibiting the same mode of failure, i.e. loss of an outer phase L1 or L3. Hawker Siddeley Switchgear Ltd has confirmed that with all of these incidents there had been a machining oversize of the bearing hole within the drive beam which did not have the intended interference fit and additionally, Loctite had not been applied. In combination with this, it is believed that the number of operations performed by the circuit breaker can accelerate the migration of the drive beam bearing if it is not secure.
13. An on-site modification for products currently in service has been developed and following a robust testing programme, a product enhancement was introduced from 1st November 2014, which prevents a possible reoccurrence of this matter.
14. Related Documents
 - a) HSS Ltd letter dated 13 Oct 15 (RAF Menwith Hill)
 - b) HSS Ltd letter dated 14 Oct 15 (RAF Menwith Hill)

End.