

Report  
on  
Defective Type SB12  
Auxiliary Switches  
on  
General Electric  
Metalclad Switchgear,

7908200 294 J

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## I. Introduction

In accordance with the requirements of 10 CFR 50.55e, this final report is submitted relative to the deficiency in General Electric Type SB12 auxiliary switches.

General Electric advised us by letter dated July 6, 1979, of a potential 10 CFR 21 incident related to auxiliary switches used in metalclad switchgear. Action was immediately taken to determine if defective switches were in existence at the Callaway jobsite. General Electric was advised by Bechtel that the defective switches constituted a reportable deficiency and they were requested to take corrective action. General Electric subsequently instructed their local Installation and Service Engineering Division representative to coordinate an inspection and replacement program.

## II. Material Description

Type SB12 auxiliary switches form an integral part of the circuit breaker trip coil circuit. The trip coil and switch "a" contacts are monitored on the front door of the switchgear by a red light which is illuminated when the breaker is closed. The illuminated red light signifies trip circuit continuity and that a trip signal will open the breaker.

In addition, Type SB12 auxiliary switches are provided as stationary contacts in the switchgear cubicle for interlocking and annunciation.

## III. Material Deficiency and Safety Implications

Factory tests by General Electric revealed that some Type SB12 switches on circuit breakers were found to have intermittent continuity through the switch "a" contacts in the trip coil circuit.

Investigation by General Electric revealed that a die used to form a hole in the contact arms of the switch had worn resulting in elongated holes. This condition could permit the contact bridge member to move laterally relative to the contact arm resulting in occasionally improper contact wipe.

Failure of this auxiliary switch contact to close prevents electrical tripping of the circuit breaker, and, if undetected, the ability to provide reliable power to Class IE loads could be significantly degraded.

#### IV. Investigation at the Callaway Jobsite

An inspection program was undertaken at the Callaway jobsite to identify Type SB12 switches in the 4.16KV Class IE metalclad switchgear supplied by General Electric. The identification was performed using the Quality Control Acceptance Number on each switch. This QC number consists of a date code which is unique to the date of switch manufacture. The results of this inspection are contained in Attachment A. This information has been communicated to General Electric.

It was determined by GE that all Type SB12 switches in Class IE applications at the Callaway jobsite with the exception of those with QC Acceptance Number 30FM were defective.

#### V. Corrective Action

Nonconformance report No. 2SN-0822-E was issued on July 17, 1979, to document the Type SB12 auxiliary switches that have been received at the Callaway jobsite. "QC Hold" tags have been placed on all Type SB12 switches. GE will replace the defective switches when replacements become available.

Attachment A

## Summary of Callaway Jobsite Class IE Type SB12 Auxiliary Switches

<u>Circuit Breaker Serial Number</u>	<u>General Electric Drawing Number</u>	<u>Quality Control Acceptance No.</u>
269A5311 - 011	226A9287-G1	31AR
- 012	"	31AR
- 001	"	31ER
- 002	"	31ER
- 003	"	31ER
- 004	"	31ER
- 005	"	31ER
- 006	"	31ER
- 007	"	31ER
- 008	"	31ER
- 009	"	31ER
- 010	"	31ER
- 015	"	31ER
269A6000 - 001	"	31ER
- 020	"	31ER

<u>Metalclad Switchgear Equipment Number</u>	<u>General Electric Drawing Number</u>	<u>Quality Control Acceptance No.</u>
NB0101	6353570-G12	30PM
02	"	30JM
03	"	30JM
04	"	30JM
05	"	30JM
06	"	30JM
07	"	30JM
08	"	30FM
09	"	30FM
10	"	30JM
11	"	30JM
12	"	30JM
13	"	30JM
14	"	30JM
15	"	30HM
16	"	30HM
17	"	30JM
NB0201	"	30HM
02	"	30JM
03	"	30HM
04	"	30HM
05	"	30HM
06	"	30HM
07	"	30JM

## Summary of Callaway Jobsite Class IE Type SB12 Auxiliary Switches (cont'd)

<u>Metalclad Switchgear Equipment Number</u>	<u>General Electric Drawing Number</u>	<u>Quality Control Acceptance No.</u>
NB0208	6353570-G12	30HM
09	"	30JM
10	"	30HM
11	"	30JM
12	"	30HM
13	"	30HM
14	"	30HM
15	"	30HM
16	"	30HM
17	"	30HM