

General Information or Other (PAR)

Event # 45100

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NRC Notified by: HANK SEPP	Notifications: GLENN DENTEL R1DO
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Emergency Class: NON EMERGENCY	JULIO LARA R3DO
10 CFR Section:	OMID TABATABAI NRO
21.21 UNSPECIFIED PARAGRAPH	JOHN THORP NRR

PART 21 REPORT - AIR CIRCUIT BREAKER DEFICIENCY

The following information was received from Westinghouse via facsimile:

Westinghouse provided information pursuant to the requirements to 10 CFR 21 to report an issue concerning the failure of a Westinghouse DB-100 circuit breaker to close after a new manufacturing cotter pin was installed during refurbishment. Westinghouse has supplied the air circuit breaker at nuclear generating stations.

When a DB-100 air circuit breaker failed to close on demand, the air circuit breaker was returned to Westinghouse to investigate the cause of this failure. The air circuit breaker was successfully cycled several times at Westinghouse before the failure to close was repeated.

Upon discovery of the DB-100 circuit breaker failing to close, Westinghouse identified plants that have purchased safety related DB-75 and DB-100 circuit breakers and reviewed the configuration of available breakers and drawings.

Westinghouse has notified the affected plants which are: R. E. Ginna, Indian Point Unit 2, Point Beach and H. B. Robinson.

Westinghouse will be issuing a Nuclear Safety Advisory Letter (NSAL) documenting this issue.

JEIG
NRR



Fax Cover Sheet

To: NRC OPERATIONS CTR From: HANK SEPP
Fax: 301-816-5151 Pages: COVER + 2
Phone: 301-816-5100 Date: 5-28-09
Re: _____ cc: _____

Urgent For Review Please Comment Please Reply

Comments:

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May 28, 2009

Subject: Notification of the Potential Existence of Defects Pursuant to 10CFR21

The following information is provided pursuant to the requirements to 10 CFR 21 to report the potential for the existence of a SUBSTANTIAL SAFETY HAZARD. This issue concerns the failure of a Westinghouse DB-100 circuit breaker to close after a new manufacturing cotter pin was installed during refurbishment. Westinghouse has supplied the control relay or safety-related applications at nuclear generating stations.

Background

A DB-100 air circuit breaker failed to close on demand. The air circuit breaker was returned to Westinghouse to investigate the cause of this failure. The air circuit breaker was successfully cycled several times at Westinghouse before the failure to close was repeated.

When the air circuit breaker failed to close, a visual inspection revealed that the control relay lifting link was in the up position and was holding the control relay release lever trip pin (silver bullet) in the up or released position. This condition does not allow the control relay contacts to close to energize the closing solenoid coil. After investigation it was determined that the manufacturing cotter pin had rotated in such a way that the lifting link could not fall to the normal reset position. The air circuit breaker could not be electrically closed in this condition. This issue affects both types of air circuit breakers since the same control relay mounting assembly and lifting link are used on both the DB-75 and DB-100 air circuit breakers.

Evaluation

A review of the drawings and available DB-75 and DB-100 air circuit breakers revealed that one of the following: a drive screw (Size 0 x .25"), a short cotter pin (.062" dia x .25") or a long cotter pin (.062" dia x .75") have been used to capture the control relay lifting link. The issue affects only those DB-75 and DB-100 circuit breakers that have a long cotter pin. The long cotter pin has sufficient length that if the bent legs become orientated in a vertical position, the lifting link may not fall, preventing the control relay release lever trip pin from resetting. This issue does not affect air circuit breakers that have a drive screw or a short cotter pin that captures the lift link

Westinghouse understands that the direct cause of the failure is that the manufacturing cotter pin used to capture the control relay lifting link rotated in such a way that the control relay release lever trip pin was held in the up or released position, preventing the breaker from closing again.

Safety Impact

DB-75 and DB-100 air circuit breakers are typically used in balance-of-plant applications (not reactor trip). This issue affects air circuit breakers that must close to perform their safety function. The emergency diesel generator output breaker is an identified safety-related application that a DB-75 or DB-100 air circuit breaker must close to provide its safety function. DB-75 or DB-100 air circuit breakers that must open to provide their safety function would still be capable of providing their safety function. There has been only one failure that Westinghouse is aware of due to this issue. Bending of the cotter pin is a hand operation and not all cotter pins will be bent in exactly the same way. It is possible for a long cotter pin to be bent in such a way that this issue would not exist. Although records do not indicate which air circuit breakers have control relays containing the long cotter pin, Westinghouse has been able to limit the population of suspect air circuit breakers to 14 built or refurbished at Westinghouse RRAS. The final configuration of each cotter pin may be different, it is possible but highly unlikely that redundant air circuit breakers would fail simultaneously. Failure of these safety related breakers would be detectable.

Corrective Action

Upon discovery of the DB-100 circuit breaker failing to close, Westinghouse identified plants that have purchased safety related DB-75 and DB-100 circuit breakers and reviewed the configuration of available breakers and drawings.

Plant Applicability

This notification is applicable to R. E. Ginna, Indian Point Unit 2, Point Beach and H. B. Robinson

Communications

Westinghouse will be issuing a Nuclear Safety Advisory Letter (NSAL) documenting this issue.

Very truly yours,



H. A. Sepp, Chairman
Westinghouse Safety Review Committee

cc: G. Bacuta (NRC)