Small Voids in the Kline Arc Chute

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Synopsis:

This report is being generated at the request of DC Cook to address the use of Kline Arc Chutes with small voids in the side sheets of the assembly.

EVALUATION:

The material used on the Kline side sheets is called Kleemite. It is a resin material that is brittle by nature and it is not uncommon for a small piece of the molded material to crack or chip off during shipping and handling of the material.

ABB’s documented acceptance criteria for chips and cracks can be found in WI-PSC-01 and is as follows:

Acceptance Criteria:

11.3.1 Surface and hairline cracks that do not penetrate entirely through inside and outside areas do not require replacement of the arc chute assembly.

11.3.2 Cracks on lower portions and portions outside the area where the arc is extinguished do not require replacement unless they are severe enough (bulk cracking) to possibly affect the ability of the assembly to maintain its position/function.

11.3.3 Surface chips, abrasions, and indentations do not require replacement.

11.3.4 When it is apparent that sections of the arc chute have broken off in pieces > 1/4” square or there is a gap > 1/16” between the outer shell halves, the arc chute should be replaced.
It has been ABB’s practice to allow small chips in the side sheets that have no detrimental effects on the Arc Chute Assembly performance.

Small chips and dings that do not effect the containment of the Arc have been allowed.
No through cracks in any of the materials should be allowed or cracks that have an opportunity to migrate, (no defined end).

In the Area at the top of the Arc Chute it is allowable for a chip in the material. This chip is again restricted to no more than .25 inches square.
The bottom of the side sheet is allowed to have imperfections similar to the one shown above. They should not have any cracks or loose material that could be dislodged and become an impediment to the operation of the movable contacts.

Conclusion:

Small chips and dings have been a normal occurrence since Kleemite was used to replace the original Asbestos containing material in early 1987. Since that time there has been no reported failure of the assemblies as a result of the circumstances documented in this report. It is ABB’s opinion that these are a normal part of the molding and assembly process and should have no detrimental effects on the equipment. It is also our opinion that any area that is larger than those shown and described above should result in rejection of the Arc Chute Assembly.