

05/15/2002

U.S. Nuclear Regulatory Commission Operations Center Event Report

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General Information or Other (PAR)

Event # 38920

Rep Org: SOLID STATE CONTROLS, INC		Notification Date / Time: 05/15/2002 15:07 (EDT)	
Supplier: SOLID STATE CONTROLS, INC		Event Date / Time: 04/15/2002 (EDT)	
		Last Modification: 05/15/2002	
Region: 3		Docket #:	
City: COLUMBUS		Agreement State: Yes	
County:		License #:	
State: OH			
NRC Notified by: W. G. HAMPTON (FAX)		Notifications: RONALD GARDNER R3	
HQ Ops Officer: MIKE NORRIS			
Emergency Class: NON EMERGENCY			
10 CFR Section:			
21.21 UNSPECIFIED PARAGRAPH			

10 CFR 21 NOTIFICATION-POTENTIAL DEFECT INVOLVING FAN ASSEMBLIES FOR UPS SYSTEMS

"The attached 10 CFR Part 21 record, Attachment A, is submitted to report a potential for a defect in fan assemblies used in Uninterruptible Power Systems manufactured under the Solidstate Controls, Inc., 10CFR50 Appendix B Program.

"Nature of the defect:

"PROBLEM SEEN: The above assembly contains a component part - an aluminum, five-wing fan blade, which potentially could separate from the hub. If the blade should come loose there may not be an alarm indication of loss of cooling. Additionally, the loose blade may cause a short circuit if it falls into the equipment and should land across opposing current carrying devices.

"CAUSE: We have determined that one fan blade style from one specific manufacturer of part number 03-470100-00 could, under certain conditions, separate from its hub.

"EFFECT ON SYSTEM PERFORMANCE: Fan Assembly - THE SEPARATION OF THE BLADE FROM THE HUB COULD CAUSE THE SYSTEM TO DROP POWER TO THE LOAD. If the worst case failure mode described above were to occur, it would result in the motor continuing to operate, thereby, not allowing the internal alarm mechanism to activate. Further, the blade itself could fall into the operating equipment causing a short circuit. It is important to note that the short circuit situation has not been reported.

"US NUCLEAR PLANT IMPACTED BY THIS ACTION: There are approximately 30 plants listed"

IE19



May 10, 2002

VIA FAX 301-816-5151
(10 pages total)

US Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

**Subject: 10 CFR 21 NOTIFICATION – POTENTIAL DEFECT INVOLVING FAN
ASSEMBLIES USED IN FORCED AIR COOLED UNINTERRUPTIBLE
POWER SUPPLY SYSTEMS**

The attached 10CFR Part 21 record, Attachment A, is submitted to report a potential for a defect in fan assemblies used in Uninterruptible Power Systems manufactured under the Solidstate Controls, Inc., 10CFR50 Appendix B Program.

Each of the plants, as indicated in the attached reporting, has been notified of this report and requested to inspect and replace affected assemblies as necessary. Attachment B is a typical notification letter that has been provided to our clients. Attachment C is a listing of notified clients.

Sincerely,
SOLIDSTATE CONTROLS, INC.



W. G. Hampton
Director, Quality Assurance

WGH/FAN NRC 10CFR21 NOTIFICATION

Attachment A
May 10, 2002

**10 CFR 21 NOTIFICATION -- POTENTIAL DEFECT INVOLVING FAN
ASSEMBLIES USED IN FORCED AIR COOLED UNINTERRUPTIBLE POWER
SUPPLY SYSTEMS**

1. Identification of the individual and firm informing the commission:

William G. Hampton
Director, Quality Assurance

Solidstate Controls, Inc.
875 Dearborn Drive
Columbus, OH 43085

2. Identification of the facility and basic component involved:

Affected parts were manufactured between February 1999 and February 2002. Parts were used in both **safety (IE) and non-safety applications.**

See Attachment C.

3. Identification of the firm supplying the basic component:

Solidstate Controls, Inc.
875 Dearborn Drive
Columbus, OH 43085

4. Nature of the defect:

PROBLEM SEEN: The above assembly contains a component part - an aluminum, five-wing fan blade, which potentially could separate from the hub. If the blade should come loose there may not be an alarm indication of loss of cooling. Additionally, the loose blade may cause a short circuit if it falls into the equipment and should land across opposing current carrying devices.

CAUSE: We have determined that one fan blade style from one specific manufacturer of part number 03-470100-00 could, under certain conditions, separate from its hub.

Attachment A

EFFECT ON SYSTEM PERFORMANCE: Fan Assembly – THE SEPERATION OF THE BLADE FROM THE HUB COULD CAUSE THE SYSTEM TO DROP POWER TO THE LOAD. If the worst case failure mode described above were to occur, it would result in the motor continuing to operate, thereby, not allowing the internal alarm mechanism to activate. Further, the blade itself could fall into the operating equipment causing a short circuit. It is important to note that the short circuit situation has not been reported.

5. Date the defect was discovered to effect a basic component:

The determination that a defect affected a basic component resulted from a problem reported by First Energy - Toledo Edison – Davis Bessie Plant in a non-safety application, with subsequent verification of the problem as reported, and detailed investigation on April 15, 2002

6. Number and location of all such components:

See # 2 above.

7. Corrective action that has been/is being taken:

a) Solidstate Controls has upgraded the fan blade from the aluminum, five-wing, one-piece design, to a prior proven, more robust two-piece, four-wing design, with an operating record of no failures in excess of 10 years. Any replacement assembly will consist of a blade that will be this two-piece, four-wing design.

b) Notified all companies/plants that have received parts or systems with the affected parts within manufacture dates to inspect or replace the affected assemblies. They need not return the potentially defective assemblies to Solidstate Controls, Inc. They should be discarded.

8. Additional advice related to the defect:

Recommended Inspection: Solidstate Controls, Inc. is recommending that plant maintenance organizations inspect the fan blades in SCI Uninterruptible Power Systems purchased between February 1999 and January 2002 or had replacement fans installed during this same time period, to assure that the following conditions ARE present.

Attachment A

- ♦ That all blades are secure on the hub, and
- ♦ That no obvious vibration or out-of-balance situation is present, and
- ♦ That the individual blade wings are not obviously distorted or bent and are of visually equal distance from the cage rings/ribs.

IF THE BLADE IS LOOSE OR WOBBLER THE ENTIRE FAN ASSEMBLY SHOULD BE REPLACED.

Attachment B
May 10, 2002

(Typical sample of client notification letter)

May 10, 2002

Attention: Manager, Nuclear Licensing & Operations Support
Virginia Power
Innsbrook Technical Center
5000 Dominion Blvd.
Glen Allen, VA 23060

Subject: Notification of Potential Defect - 10CFR21 Report.

Gentlemen:

According to our records your Plants recently purchased a system or replacement part for your Solidstate Controls Inverters, Chargers and/or Regulating Transformers. We have identified a potential problem with the Fan Blade part in that purchase. The same fan blade is used in both safety (1E) and non-safety equipment.

SCI Part Number: 80-900033-90 or 80-570005-90

Part Description: Fan Assembly - 10 inch. Unit cooling.

Quantity: See attached list

Fan Assemblies Affected: Manufactured between February 1999 and February 2002

The attached pages provides a description of the situation about the above part(s). We request that you review your parts inventory and operating systems for the involved part.

Solidstate Controls will be providing replacement fan assemblies. If you have fan assemblies in use or in stock with a four-wing design, they are NOT affected. Only the fan assemblies with the aluminum, five-wing design are involved. Contact Ms. Sue Wampler to either request the replacement fans and instructions for installation to be performed by your own plant maintenance personnel or request a field service technician to do the replacement installation. Call for Ms. Wampler at 1-800-635-7300 or Client Services at 1-800-222-9079.

NOTE: Muffin type tubeaxial fans physically mounted on heat sinks are not involved with this notice.

Additionally, the US Nuclear Regulatory Commission is also being advised of this report.

We regret the inconvenience this has caused you. If you have any questions you may contact Ms. Wampler or the undersigned.

Sincerely,
SOLDISTATE CONTROLS, INC.

W. G. Hampton
Director, Quality Assurance

CC: Mr. Conway Kehoe (NUPIC Representative)
Innsbrook Technical Center (2NW)
5000 Dominion Blvd.
Glen Allen, VA 23060

Attachment B

SCI Part Number: 80-570005-90 or 80-900033-90

Part Description: Fan Assembly - 10 inch unit cooling

PROBLEM YOU COULD SEE: The above assembly contains a component part - an aluminum, five-wing fan blade, which potentially could separate from the hub. If the blade should come loose there may not be an alarm indication of loss of cooling, and/or the loose blade may cause a short circuit if it falls into the equipment and contacts exposed electrically active parts.

CAUSE: We have determined that one fan blade style from one specific manufacturer of part number 03-470100-00 could, under certain conditions, separate from its hub.

EFFECT ON SYSTEM PERFORMANCE: If the worst case failure mode described above were to occur, it would result in the motor continuing to operate, thereby, not allowing the internal alarm mechanism to activate. Further, the blade itself could fall into the operating equipment causing a short circuit. It is important to note that the short circuit situation has not been reported.

ACTION REQUIRED: Solidstate Controls, Inc. is recommending that plant maintenance organizations inspect the fan blades in SCI Uninterruptible Power Systems purchased between February 1999 and January 2002 or had replacement fans installed during this same time period, to assure that the following conditions ARE present.

- That all blades are secure on the hub, and
- That no excessive vibration or out-of-balance situation is present, and
- That the individual blade wings are not obviously distorted/bent and visually, equal distance from the cage rings.

IF THE BLADE IS LOOSE OR WOBBLER THE ENTIRE FAN ASSEMBLY SHOULD BE REPLACED.

SCI recommends this inspection be performed immediately upon receipt of this correspondence and at two-month intervals thereafter until your plant's scheduled preventive maintenance fan assembly change-out occurs.

Attachment B

Fan change out can be accomplished either by arranging for a service technician to visit your site to perform the change out operation, or we will provide replacement fan assemblies and instructions for your maintenance personnel to replace the assemblies themselves.

Contact Ms. Sue Wampler and if necessary, we can schedule a service technician to visit your site to perform the change out activity or ship the replacement assembly(ies). It is not necessary to return the defective fan assemblies to SCI. The assemblies should be discarded. Contact Solidstate Controls at 1-800-635-7300 or 1-800-222-9079.

SOLIDSTATE CONTROLS CORRECTIVE ACTION: Solidstate Controls has upgraded the fan blade from the aluminum, five-wing, one-piece design, to a prior proven, more robust two-piece, four-wing design, with an operating record of no failures in excess of 10 years.

US NUCLEAR PLANTS IMPACTED BY THIS ACTION:

See Attachment C

Client Listing for Notification

Attachment C

Client Name/Plant	Job No.	Date Shipped	PO No.	Fan Quantity	Part Number/System
AEP - DC Cook	B74006	10/23/1999	NU040000003428	20	80-570005-90
	B72995	6/25/1999	NU04 0000001673	18	80-900033-90
	C74539	3/8/2000	NU04-0000004951	12	System
AECL	C72921	3/30/2000	C39490	10	System
AMEREN - UE- Callaway	P73164	6/29/1999	780011-1825	1	80-570005-90
AMERICAN ELECTRIC, INC.	S72157	4/8/1999	5541-2551	4	System
ALA PWR - Farley	B73062	8/6/1999	QP990549	18	80-900033-90
COMM ED. - Braidwood	P72971	5/25/1999	491698	2	80-570005-90
	P73378	7/26/1999	42J185	1	80-570005-90
COMM ED - Quad Cities	S72825	7/19/1999	368002	10	System
Dominion -North Anna	B74831	3/24/2000	45036135	2	80-570005-90
	B74831	5/2/2000	45036135	1	80-900033-90
	B73154	2/15/2000	70005097	2	80-900033-90
Dominion - Surry	B77626	6/7/2001	45078661	22	80-900033-90
	B77811	10/25/2001	45082577	10	80-900033-90
DUKE - McGuire	C72784	1/7/2000	MN51707	18	System
	S71951	4/30/1999	MN47563	12	System
	S73867	3/29/2000	MN56340	16	System
	B76393	11/27/2000	NE426	3	80-900033-90
Energy Northwest	C75200	12/22/2000	306429	4	System
	C75203	12/22/2000	306422	16	System
	B77611	5/16/2001	308486	1	80-900033-90
ENTERGY - Grand Gulf	P72963	5/28/1999	MP990500	3	80-570005-90
ENTERGY - Riverbend	C77284	7/20/2001	RBV10631	15	System
ENTERGY - Arkansas Nuc.	B77552	4/3/2001	PQY10468	8	80-900033-90
One					
Ergytech -	B77199	5/8/2001	00-2-22604-CNH	5	80-570005-90
	B74941	4/4/2000	45012709	1	80-900033-90
	B78412	10/2/2001	45027436	1	80-900033-90
	C73423	3/8/2000	18664	16	System
FIRST ENERGY- Davis Besse	P77393	3/7/2001	7055861	1	80-570005-90
	S77420	12/28/2001	7053185	12	System
FIRST ENERGY - Beaver Valley	R78169	10/18/2001	7064941	4	80-900033-90
FLA PWR - Crystal River	C71727	4/30/1999	F77311D	16	System
	C72400	8/6/1999	78768	4	System
FP&L - St. Lucie	P73980	10/19/1999	40836	2	80-570005-90
	P74213	11/22/1999	41322	4	80-570005-90
	P74297	12/10/1999	41663	2	80-570005-90
	P75384	5/15/2000	45655	1	80-570005-90
FP&L - Turkey Pt.	P74667	1/31/2000	unknown	1	80-570005-90
	P74910	3/7/2000	S00559 00109	1	80-900033-90
	P72251	2/18/1999	36259	2	80-900033-90
	P72852	5/28/1999	37907	2	80-900033-90
	P74044	11/11/1999	41008	2	80-900033-90

Client Listing for Notification

Attachment C

Client Name/Plant	Job No.	Date Shipped	PO No.	Fan Quantity	Part Number/System
	P75211	6/15/2000	45073	2	80-900033-90
	P75907	10/24/2000	46882	2	80-900033-90
ILLINOIS POWER - Clinton	P73036	6/29/1999	566711	6	80-570005-90
	F73860	11/24/1999	567693	6	80-570005-90
KEPCO - Koseal	B75504	7/26/2000	C00NYG4-0073-660	16	80-570005-90
	P78024	6/6/2001	780013-463	1	80-570005-90
	S75510	9/6/2000	COONKR-1-D003-380	4	System
NEB PUB PWR DIST - Cooper	P74314	12/10/1999	992624	2	80-570005-90
NIAGARA MOHAWK	P74858	2/29/2000	00-27879	1	80-570005-90
	B78913	1/4/2002	01-37169	16	80-900033-90
	F68041	10/30/2000	97-14883	12	80-570005-90
NY PWR ATHY - Indian Point 3	P74878	3/3/2000	4500019058	1	80-570005-90
OMAHA PUB PWR DIST-	F77549	5/31/2001	35292	8	80-570005-90
PP&L - Susquahana	P75131	4/10/2000	0-11989-1	1	80-570005-90
	P75178	4/17/2000	011976-1	5	80-570005-90
PG&E - Diablo Canyon	B71934	1/29/1999	097669RMA4500680807	2	80-900033-90
	B73280	8/25/1999	99897	2	80-900033-90
	B75240	6/9/2000	103077	2	80-900033-90
	B76672	1/30/2001	105438	4	80-900033-90
	B78968	1/11/2002	108855	2	80-900033-90
RG&E - Ginna	F77175	3/23/2001	5000003028	6	80-570005-90
SOUTHERN CALIF EDISON	P76585	11/8/2000	142167-DIR-0377554	4	80-570005-90
	P77210	2/15/2001	147615-SOL	4	80-570005-90
	P77713	4/27/2001	151874-DIR-0392611	8	80-570005-90
SOUTHERN NUC-Vogtle	P79465	1/29/2002	7052874/001	1	80-570005-90
	S78282	10/24/2001	7050995	4	System
TVA - Sequoyah	B74248	12/8/1999	P-00NC8-259314-000	1	80-900033-90
	C72143	8/31/1999	P-99N5F-246616-00	30	System
TEXAS UTIL. - Comanche	S75249	1/17/2001	320466 6D6	42	System
Peak					
WIS PUB SVC - Kewaunee	S76869	3/30/2001	268870	10	System
Nuc					
				511	Total