Part 21 (PAR) Event # 46923

Rep Org:	VELAN INC	**Notification Date / Time:**	06/03/2011 16:30		(EDT)
Supplier:	VELAN INC	**Event Date / Time:**	04/12/2011		(EST)
		Last Modification:	06/03/2011		
Region:		**Docket #:**			
City:	QUEBEC	**Agreement State:**	No		
County:	CANADA	**License #:**			
State:					
NRC Notified by:	VICTOR APOSTOLESCU	**Notifications:**	RICHARD CONTE		R1DO
HQ Ops Officer:	BILL HUFFMAN		JOSELITO CALLE		R2DO
Emergency Class:	NON EMERGENCY		ROBERT DALEY		R3DO
10 CFR Section:			BLAIR SPITZBERG		R4DO
21.21	UNSPECIFIED PARAGRAPH		PT 21 GRP VIA E-MAIL		

POTENTIAL DEFECT IN CERTAIN VELAN SUPPLIED GLOBE VALVES

The following is a summary of a Part 21 e-mail notification received from Velan Inc:

Velan Inc., a valve vendor, has identified a potential defect in certain lots of 0.5, 0.75 and 1 inch NPS globe valves sold to Areva and Fenoc. The failure could result in the valve travelling into the bonnet cavity and became jammed between body and bonnet. The analysis revealed that the failure was caused by the wrong bonnet being installed on the valve which ultimately allowed the disc to travel too far into the bonnet cavity and consequently the disc dropped into the body-bonnet gap. This prevented the valve from being closed during manual operation.

Internal analysis also determined that this failure mode is very plausible in valves installed with the stem in a horizontal orientation. Valves installed with the stem in vertical orientation are far less likely to fail but we cannot guarantee that; on valves that are normally fully open certain flow conditions may cause the disc to tilt and jam between body and bonnet. Nevertheless, operational history seems to suggest that valves installed with the stem in vertical orientation have not experienced this type of failure.

Velan has requested that each affected utility reviews the individual applications for the specific valves identified in this notification; in the event of any application where the valves inability to close will impact significantly the safe operation of the plant. Velan will work with the utility towards reaching a suitable solution.

Velan does not have specific information concerning the specific system and function applicable to these globe valves and therefore we cannot assess whether a substantial safety hazard exists as a result of their inability to close after falling as described above.

Velan's investigation and review of the available manufacturing records revealed that the same bonnet, with an

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oversized lift, was installed in all valves identified hereunder.

CUSTOMER	ORDER QTY.	VALVE FIGURE No.	VALVE SERIAL No.
AREVA NP	8	W04-2074B-02AA	971022-1 to-8
AREVA NP	12	W03-2074B-02AA	971042-1 to -12
AREVA NP	27	W04-2074B-02AA	971048-1 to -27
AREVA NP	5	W03-2074B-02AA	981028-1 to-5
AREVA NP	5	W03-20748-02AA	981030-1 to-5
AREVA NP	10	W05-20748-02AA	001012-1 to-10
AREVA NP	13	W03-20748-02AA	001029 -1 to -13
AREVA NP	26	W04 20748-02AA	001056 -1 to -26
ARE VA NP	10	W04-20748-02AA	011035-1 to-10
FENOC	4	W05-2074B 02AA	001033 -1 to-4

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June 3, 2011

U.S. Nuclear Regulatory Commission
Document Control Desk

Washington, D.C. 20555-0001

Attention: Document Control Desk, via fax 301-816-5151

Subject: Globe Valve Notification, sizes 0.5, 0.75 and 1 NPS, Class 800, Carbon Steel

Note: Similar Notifications were sent to Areva and First Energy

Gentlemen,

On April 12, 2011 Velan was notified by Dominion Connecticut that a 0.5 NPS globe valve model number W03-2074B-02AA, Velan drawing P1-76800-N03 installed at Millstone 2 in a non-safety related portion of the main-steam system could not be closed when operated by its handwheel.

The valve was installed with the stem in a horizontal orientation; during the installation and commissioning procedure the valve was fully open (on the back seat position). The disc travelled into the bonnet cavity and became jammed between body and bonnet; the sketch in Exhibit # 1 shows the failure mode.
The analysis revealed that the failure was caused by the wrong bonnet being installed on the valve which ultimately allowed the disc to travel too far into the bonnet cavity and consequently the disc dropped into the body-bonnet gap. This prevented the valve from being closed during manual operation. The event is covered by Millstone 2 OE 33277.

The valve subject of OE 33277 was part of a lot of 13 sold to Areva on their PO 87561, Velan PO P011-909330-N, item 11, and later sold to Millstone.

Our investigation and review of the available manufacturing records revealed that the same bonnet, with an oversized lift, was installed in all valves identified hereunder.

CUSTOMER	VELAN PO No.	VELAN ITEM No.	CUSTOMER PO No.	ORDER ITEM No.	QTY.	VALVE FIGURE No.	VALVE SERIAL No.
AREVA NP	P1-81483-N	0001A	56333	1A	8	W04-2074B-02AA	971022-1 to -8
AREVA NP	P1-81510-N	00001	56892	1	12	W03-2074B-02AA	971042-1 to -12
AREVA NP	P1-81510-N	00002	56892	2	27	W04-2074B-02AA	971048-1 to -27
AREVA NP	P1-81781-N	00001	62979	1	5	W03-2074B-02AA	981028-1 to -5
AREVA NP	P1-81833-N	00002	63980	2	5	W03-2074B-02AA	981030-1 to -5
AREVA NP	P011-909260-N	00001	88118	1	10	W05-2074B-02AA	001012-1 to -10
AREVA NP	P011-909330-N	00011	87561	11	13	W03-2074B-02AA	001029 -1 to -13
AREVA NP	P011-927040-N	00001	91880	1	26	W04-2074B-02AA	001056 -1 to -26
AREVA NP	P011-991170-N	00026	97049	26	10	W04-2074B-02AA	011035 -1 to -10
FENOC	P011-854880-N	00001	7016078	1	4	W05-2074B-02AA	001033 -1 to -4

Our internal analysis also determined that this failure mode is very plausible in valves installed with the stem in a horizontal orientation. Valves installed with the stem in vertical orientation are far less likely to fail but we cannot guarantee that; on valves that are normally fully open certain flow conditions may cause the disc to tilt and jam between body and bonnet. Nevertheless, operational history seems to suggest that valves installed with the stem in vertical orientation have not experienced this type of failure.

We do not have specific information concerning the specific system and function applicable to these globe valves and therefore we cannot assess whether a substantial safety hazard exists as a result of their inability to close after failing as described above.

We requested that each affected utility reviews the individual applications for the specific valves identified in this notification; in the event of any application where the valves inability to close will impact significantly the safe operation of the plant Velan will work with the Utility towards reaching a suitable solution.

Root cause and corrective action
Prior to 1984 Velan employed a disc-union to connect the disc with the valve stem. In 1984 a new design was introduced, using a horseshoe disc thereby eliminating the need for a disc-union and the welding required to assemble the disc to the disc-union. The old design, using bonnet part number 3523-010 was reserved afterwards for military applications.
The new design, intended for all commercial and nuclear applications, also used a new bonnet (part 3524-037), with a lower backseat necessary to accommodate the shorter lift as a result of the disc-union being eliminated.
Exhibit # 2 displays two stems, showing the aforementioned methods used to connect the disc to the stem.

Due to the bonnet part 3523-010 being nearly identical with the new bonnet, 3524-037, it was incorrectly deemed interchangeable for the latter and used in a small number of instances identified in the above table.

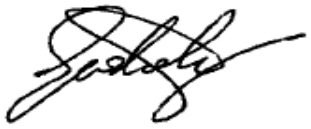
In 2003 an Engineering review identified the potential for this type of failure on valves installed with the stem in a horizontal orientation. Consequently, the existing stock of bonnets suitable for valves using the disc-union connection was scrapped immediately. Because the operational feed-back did not indicate any field problems at the time, the analysis failed to recognize the potential impact on valves assembled with old bonnets used in safety-related applications.

Corrective actions to eliminate the recurrence of such events are under review.

For any additional information on this matter please contact me at 514-748-7748 x 1134 or at victor.apostolescu@velan.com.

Sincerely yours,

Velan Inc.



Victor Apostolescu, Eng.
Vice President Quality Assurance

cc: Velan – T. Velan, I. Velan, G. Perez, J. Tsesmelis; C. Minescu, C. Schweiger (via e-mail)

Exhibit # 1

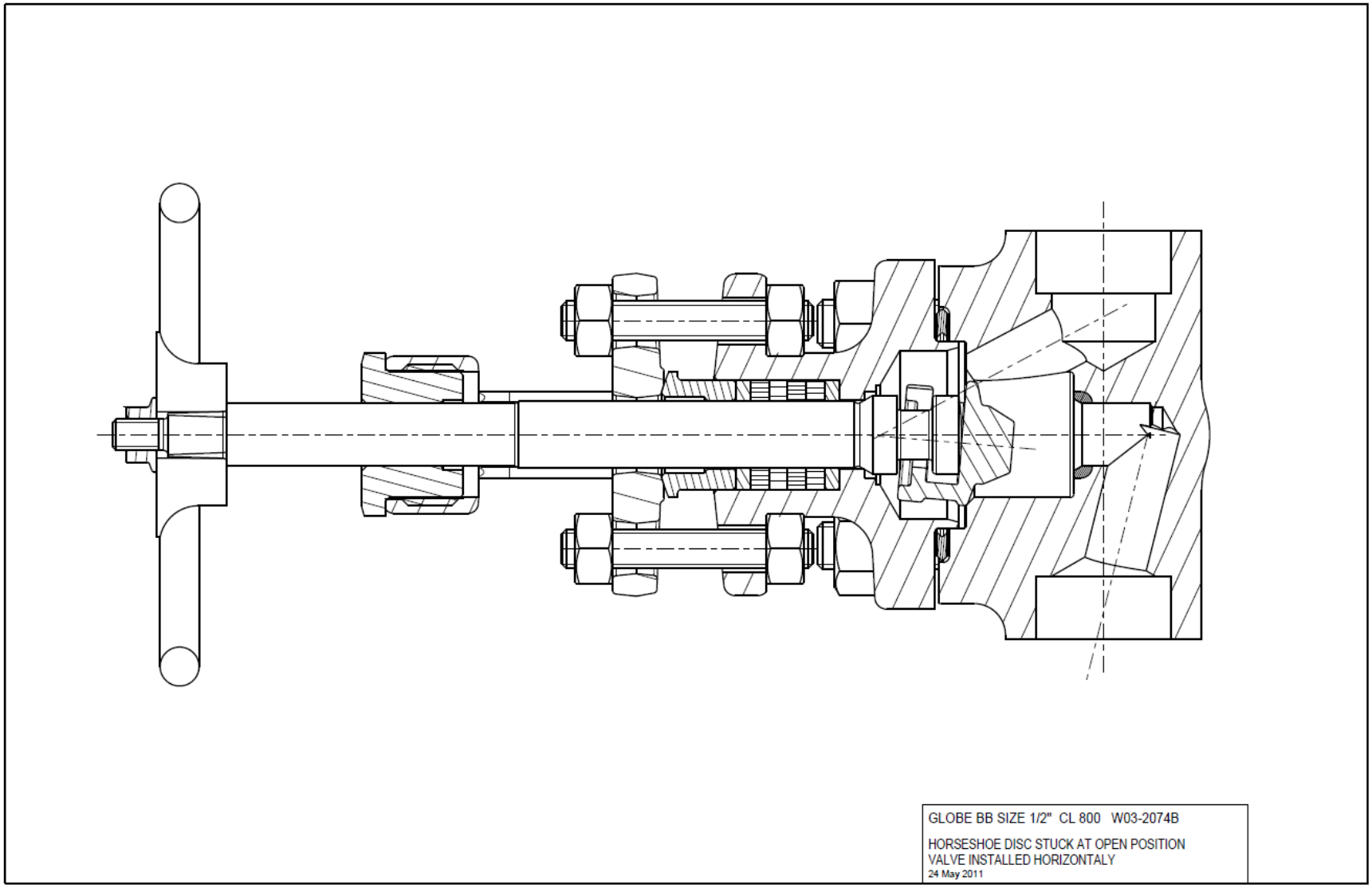


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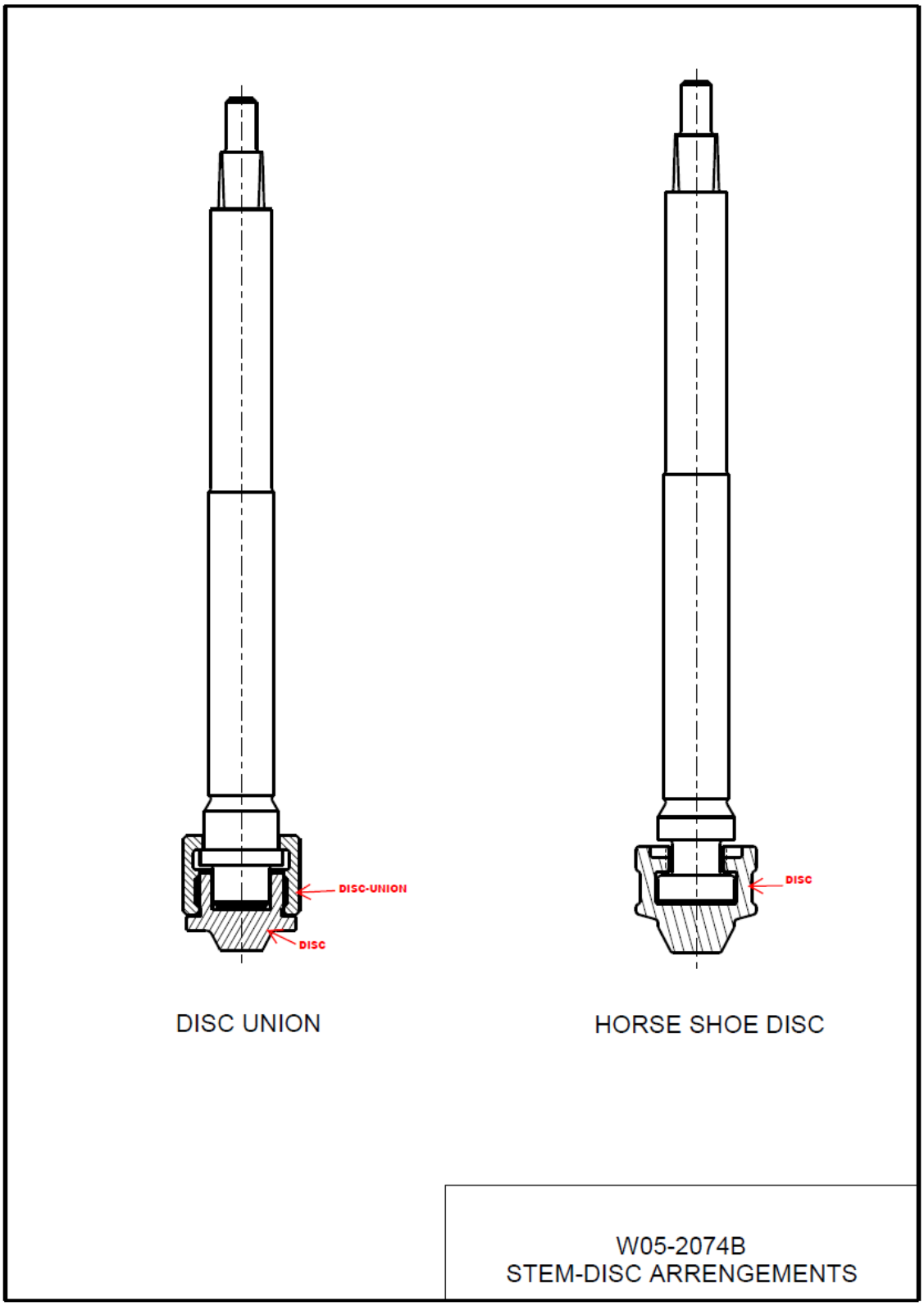
Exhibit # 2



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