

# Cardinal

INDUSTRIAL PRODUCTS

Nuclear Division of B&G Manufacturing Company, Inc.

3873 West Oquendo • Las Vegas, Nevada 89118-3098  
(702) 739-1966 • Fax (702) 739-1960

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QAM-95-065

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Reference: 10 CFR, Part 21 Notification

To Whom It May Concern:

This letter provides notification of defect to the Nuclear Regulatory Commission as required by 10 CFR Part 21, paragraph 21.21, (4).

Cardinal Industrial Products (CIP) was informally contacted by Duquesne Light-Beaver Valley Power Station to discuss mechanical failures that were discovered, when they conducted supplemental testing on a Lot of 3/8 - 24 x 2 A-193 B7 HEX CAPSCREWS identified by head markings (B7, C, TS9, S4). These fasteners were supplied by CIP to Duquesne Light on purchase order D 136646.

The method of performing additional testing was discussed with Duquesne Light and their subcontracted Testing Laboratory to assure that the testing was performed in accordance with ASTM A-370. It was decided that Duquesne Light would provide CIP with a sample to be tested by CIP, with a Duquesne representative present.

All four (4) samples supplied by Duquesne were tested at CIP, with one (1) failure. The failure exhibited an unusually low hardness and tensile per the material specification. It should be noted that ASTM A-193 B7 material does not have a hardness requirement.

CIP pulled additional product samples from stock and by conducting hardness evaluation, identified other failure's. CIP sent one (1) sample that passed hardness and one (1) sample that failed hardness out for metallurgical examination by an approved testing laboratory.

The results of this examination indicated that the "Good" sample had .006 "decarburization, and a core hardness of 35 HRC, while the "Bad" sample had no decarburization, and a core hardness of 95.5 HRB. The low core hardness, and more specifically, the lack of decarburization would indicate that the "Bad" sample did not receive the full heat treatment. The decarburization is formed, when alloy steel is heat treated in an air atmosphere, but in order for it to form the parts must reach the prescribed temperature.

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CIP also performed hardness test, as means of an indicator, on ten (10) heat lot charges that were process before and after the suspect charge was heat treated.

Duquesne Light identified test failures with product lot (3/8 x 4 A-193 B7 lot # 12133 lot code S4). CIP has identified, two (2) additional heat lot charges that exhibit the same failures in hardness as the heat lot identified by Duquesne light. Those lots are, 3/8 x 6 A-193 B7, Lot # 12134, Lot Code S5 and 5/8 - 11 x 2 1/2, A-193 B7, Lot # 11127, Lot Code TU 1).

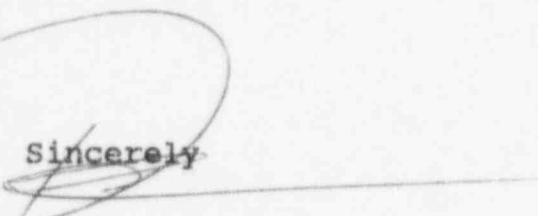
Attachment 1, to this report, identifies all of the customers who have received these suspect fasteners that could possibly create a safety hazard. The customer's have been notified of this defect and have been instructed to evaluate this condition in accordance with 10 CFR Part 21 paragraph 21.21 (a) (1) (ii) and (b) (1).

CIP is in the process of conducting additional testing on all ASTM A-193, B7 inventory that was heat treated at CIP. A hold has been placed on our A-193 B7 inventory to prevent distribution until completion of our evaluation. The above defective heat lots have been nonconformanced and placed in our bonded nonconformance area. Additionally, our heat treatment facility has been closed pending further investigation.

CIP will provide a complete investigation report to the NRC within sixty (60) days as required by 10 CFR Part 21.

Should you have any questions, concerning this issue, please contact me at (702) 739-1966.

Sincerely

  
David Z. Hathcock  
Quality Assurance Manager

Attachment (1)

cc: NRC file.

10 CFR PART 21 NOTIFICATION LIST									
3/8x4 A193 B7 Material lot# 12133 CUSTOMER	CUSTOMER P.O.#	C.I. #	DESCRIPTION	QTY.	SHIP DATE	HEAD MRKNG	ORDER STATUS	WHOM TO NOTIFY	
SCI 812 E. Browning Streator, IL 61364	53021	54021-2	3/8-16x 3 1/2 A193 B7 Hex Capscrew	100	6/8/94	B7, C TS9, S4	Commercial		
SCI 812 E. Browning Streator, IL 61364	13123	55500-2	3/8-16x 3 1/2 A193 B7 Hex Capscrew	25	1/16/95	B7, C TS9, S4	Commercial		
Duquesne Light P.O. Box 347 Shippingport, PA 15077-0347	D136388	55513-1	3/8-16 X 1 1/2	101	1/13/95	B7, C TS9, S4	Nuclear	Duquesne Light Beaver Valley pwr sta. P.O. Box 4 Shippingport, PA 15077	
Midwest Bolt & Supply 405 E. 14th Street N. Kansas City, MO 64116	88496	55527-1	3/8-24x 1 3/4 A193 B7 Hex Capscrew	248	1/25/95	B7, C TS9, S4	Commercial	Attention Mng	
Duquesne Light P.O. Box 347 Shippingport, PA 15077-0347	D136646	55646-1	3/8-24x 2 A193 B7 Hex Capscrew	101	1/27/95	B7, C TS9, S4	Nuclear	Duquesne Light Beaver Valley pwr sta. P.O. Box 4 Shippingport, PA 15077	
Canadian Worcester 20 Mid dominion acres Scarborough Ontario, Canada M1S 4A5	C4968	55692-1	3/8-16x 1 1/16 A193 B7 Hex Capscrew	100	2/20/95	B7, C TS9, S4	Nuclear	Notify QA Contact	
							Attention Mng		

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3/8X4 A193 B7 Material lot# 12133 CUSTOMER	CUSTOMER P.O.#	C.I. #	DESCRIPTION	QTY.	SHIP DATE	HEAD MRKNG	ORDER STATUS	WHOM TO NOTIFY	
Com Ed P.O. Box 767 Chicago, IL 60690	503085XX221	55699-1	3/8-24 x 4 A193 B7 Hex Capscrew Fully Threaded	12	2/7/95	B7, C TS9, S4	Nuclear	Notify QA Contact	
Com Ed P.O. Box 767 Chicago, IL 60690	503085XX221	55699-1	3/8-24 x 4 A193 B7 Hex Capscrew Fully Threaded	12	2/7/95	B7, C TS9, S4	Nuclear	Notify QA Contact	
Com Ed P.O. Box 767 Chicago, IL 60690	503085XX221	55699-1R	3/8-24 x 4 A193 B7 Hex Capscrew Fully Threaded	12	2/7/95	B7, C TS9, S4	Nuclear	Notify QA Manager	
Henry Pratt 401 S. Highland Aurora, IL 60506	UC04756	55748-1	3/8-16 X 2 1/4	8	2/23/95	B7, C TS9, S4	Nuclear	Notify QA Manager	
Georgia Power Vogtle Ele. Gen Plant Nuclear Operations P.O. Box 1600 Waynesboro, GA 30830	70213970000	55757-6	3/8-16 x 2 A193 B7 Hex Bolt	114	2/28/95	B7, C TS9, S4	Nuclear	Georgia Power Vogtle Project P.O. Box 1295 Birmingham, AL 35201 Nuclear Engineering and Licensing	
Process Products LTD 920 Caledonia Rd Toronto, Ontario Canada, M6B 3Y1	12579	55826-2	3/8-16 x 1 5/8 A193 B7 Hex Bolt	7	3/10/95	B7, C TS9, S4	Nuclear	Notify QA Contact	

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3/8X4 A193 B7 Material lot# 12133 CUSTOMER	CUSTOMER P.O.#	C.I. #	DESCRIPTION	QTY.	SHIP DATE	HEAD MRKNG	ORDER STATUS	WHOM TO NOTIFY	
SCI 812 E. Brownin Streator, IL 61364	4922	56008-1	3/8-16 x 4 A193 B7 Hex Capscrew	100	4/11/95	B7, C TS9, S4	Commercial		
Com Ed P.O. Box 767 Chicago, IL 60690	503085XX241	56058-1	3/8-16 x 4 A193 B7 Hex Capscrew 2 3/4 thread length	10	4/27/95	B7, C TS9, S4	Nuclear	Notify QA Contact	
Vermont Yankee RD5, Box 169 Ferryroad Battleboro, VT 05031	920277232	56133-3	3/8-16 x 4 A193 B7 Hex Bolt	38	5/9/95	B7, C TS9, S4	Nuclear	Notify QA Contact	
Midwest Bolt & Supply 405 E. 14th Street N. Kansas City, MO 64116	90972	56207-1	3/8-24 x 1 3/4 A193 B7 Hex Capscrew	250	5/25/95	B7, C TS9, S4	Commercial		
Illinois Power P.O. Box 2525 Decatur, IL 62525-1866	554532	56211-3	3/8-16 x 1 1/4 Alloy Multi Hex Capscrew	157	6/1/95	B7, C TS9, S4	Nuclear	Illinois Power P.O. Box 2525 Decatur, IL 62525-1866 Manager of Licensing and Safety	

10 CFR PART 21 NOTIFICATION LIST									
3/8X6 A193 B7 Material lot# 12134 CUSTOMER	CUSTOMER P.O.#	C.I. #	DESCRIPTION	QTY.	SHIP DATE	HEAD MRKNG	ORDER STATUS	WHOM TO NOTIFY	
SCI 812 E. Browning Streator, IL 61364	53021	54021-7	3/8-16 x 6 A193 B7 Hex Capscrew	150	6/8/94	B7, C TS6, S5	Commercial		
T.V.A P.O. Box Knoxville, TN 37901 37901-5500	1022567	54055-1	3/8-16 x 6 A193 B7 Hex Capscrew	10	5/25/94	B7, C TS6, S5	Nuclear	T.V.A Nuclear Licensing and Regulatory Affairs LP 5N 156B	
SCI 812 E. Browning Streator, IL 61364	72221	54182-1	3/8-16 x 5 A193 B7 Hex Capscrew	25	6/20/94	B7, C TS6, S5	Commercial		
SCI 812 E. Browning Streator, IL 61364	72221	54182-2	3/8-16 x 6 A193 B7 Hex Capscrew	25	6/20/94	B7, C TS6, S5	Commercial		
Canadian Worcester 20 Mid dominion acres Scarborough Ontario, Canada M1S 4A5	C4846	55073-2	3/8-16 x 7/8 A193 B7 Hex Capscrew Zinc Plated	100	11/28/94	B7, C TS6, S5	Nuclear	Notify QA Contact	
Canadian Worcester 20 Mid dominion acres Scarborough Ontario, Canada M1S 4A5	C4846	55073-3	3/8-16 x 1 A193 B7 Hex Capscrew Zinc Plated	50	11/28/94	B7, C TS6, S5	Nuclear	Notify QA Contact	



10 CFR PART 21 NOTIFICATION LIST									
5/8-11X2 1/2 Material lot# 11127 CUSTOMER	CUSTOMER P.O.#	C.I. #	DESCRIPTION	QTY.	SHIP DATE	HEAD MRKNG	ORDER STATUS	WHOM TO NOTIFY	
Westinghouse-hanford P.O. Box 1970 Richland, WA 99352	wbsxw316957	53587-1	5/8-11 x 2 1/2 A193 B7 Heavy Hex Bolt	8	3/9/94	B7, C TU1	Commercial		
Arkansas Nuclear One Route 3 P.O. Box 137g s. of jct. of hwy 64w and 333s. Russellville, AR 72801	P0941530	53626-2	5/8-11 x 2 1/2 A193 B7 Heavy Hex Screw	40	3/25/94	B7, C TU1	Nuclear	Entergy Operations Inc Arkansas Nuclear One Route 3 P.O. Box 137g s. of jct. of hwy 64w and 333s. Russellville, AR 72801 Industry Events Review	Attention Mng