

# 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

September 11, 1995

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 clarifies certain matters discussed in our earlier notification of defect to the Nuclear Regulatory Commission pursuant to 10 CFR Part 21, paragraph 21.21, (4), which was set forth in our letter of August 29, 1995.

B&G Manufacturing Co., Inc.'s Cardinal Industrial Products Division (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 processed, sold, and supplied to Duquesne Light on purchase order D 136646 by Cardinal Industrial Products, L.P., the entity from which B&G earlier this year purchased certain assets, including the name.

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.

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CIP pulled additional product samples from the stock purchased from the prior owner, and by conducting hardness evaluation, identified other failures. 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.

CIP also performed hardness tests on ten (10) heat lot charges that were processed 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 our report of August 29, 1995, identified all of the customers who, based on the records CIP acquired from the prior owner, received these suspect fasteners that could possibly create a safety hazard. All of these customers received these fasteners from the prior owner, and we have notified the prior owner of this situation. The customers have been notified of this defect by CIP as a service to its current customers 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 by the prior owner. 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.

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Should you have any questions, concerning this issue, please contact David Z. Hathcock, Quality Assurance Manager, at (702) 739-1966.

Sincerely

A handwritten signature in cursive script, reading "William A. Edmonds". The signature is written in dark ink and is positioned above the printed name and title.

William A. Edmonds  
President

cc: NRC file