

# Babcock & Wilcox

Power Generation Group

Attachment A  
Docket No. 50-346  
License No. NPF-3  
Serial No. 1-74  
May 31, 1979

P.O. Box 1260, Lynchburg, Va. 24505  
Telephone: (804) 384-5111

March 13, 1979

Mr. Wayne G. Reinmuth  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: Response to IE Bulletin Nos. 78-12 and 78-12A

Dear Mr. Reinmuth:

Enclosed for your information are three (3) copies of our report entitled, "Records Investigation Report Related to Off-Chemistry Welds in Material Surveillance Specimens and Responses to Bulletin 78-12 and 78-12A Supplement", which we have prepared for our customers in order to facilitate their responses to the bulletins. The report is basically divided into three (3) parts: (1) an introduction and summary of the weld wire issue; (2) general information to support the conclusions we have reached; and (3) specific responses to the information requested by the bulletins. Appendices containing copies of B&W chemical analysis requirements and weld filler wire qualification tests are included as supporting information. The information in the appendices has been selected based on your request at a January 16, 1979 meeting in Mt. Vernon, Indiana.

This report describes the investigations that were made as a result of discovering an off-chemistry condition in a reactor vessel surveillance specimen for the Crystal River 3 (CR-3) Project. The purpose of the records investigation was to determine the cause and extent of the mixed weld wire problem. The investigation also included a review of test results from actual reactor vessel production weld seams to the extent these welds could be investigated, and from reactor vessel surveillance material tests. The investigation covered the period from 1966 through November 1978. In accordance with IE Bulletin 78-12A, our response is given on a generic basis and no attempt was made to correlate specific weldments with heats or filler wire.

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Mr. Wayne G. Reinmuth  
March 13, 1979

The records investigation provides considerable support for the hypothesis that the presence of atypical chemistry condition in the Crystal River 3 surveillance block is an isolated event involving a small amount of material in one heat of wire.

The general conclusion reached as a result of the investigation of the atypical weld wire discovery is that it is very unlikely that other similar conditions exist in any reactor pressure vessel welds. Furthermore, the shop practices which have evolved over the years and which are currently in effect virtually eliminate the possibility that a vessel fabricated today might contain off-chemistry weld materials.

If you have any questions concerning the enclosed material, please contact me (Ext. 2817) or William R. Speight (Ext. 2902) of my staff.

Very truly yours

James H. Taylor  
Manager, Licensing

JHT/fw

cc: R. B. Borsum - B&W Rep. Bethesda Office

Enclosures: As stated

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Power Generation Group

Attachment B  
Docket No. 50-346  
License No. NPF-3  
Serial no. 1-74  
May 31, 1979

P.O. Box 1260, Lynchburg, Va. 24505  
Telephone: (804) 384-5111

May 24, 1979

DB-79-45

Mr. C. R. Domeck  
Nuclear Project Engineer  
Toledo Edison Company  
300 Madison Avenue  
Toledo, OH 43652

Subject: Davis-Besse Nuclear Generating Station - Unit I  
Response to NRC - IE Bulletin 78-12B

Reference: Larry Haigh/TECo telecopy to R. C. Luken/B&W - dated 5-18-79.

Dear Mr. Domeck:

To assist Mr. Haigh in responding to the NRC-IE Bulletin 78-12B regarding the records investigation related to the "off-chemistry" welds in material surveillance specimens B&W provides the following:

A. Record of Filler Wire Qualification Test WF 182-1, copy enclosed.

This record is applicable to the Linde Mn-Mo-Ni wire (heat no. 821T44) and Linde 80 Flux (lot no. 8754) combination for the following ferritic welds in the Davis-Besse 1 reactor vessel or closure head:

1. WR-1      Mk 170 intermediate shell to Mk 171 lower shell.
2. WR-35     Mk 181 lower head dutchman to Mk 6 lower head.
3. WH-7      Mk 22 closure head flange to Mk 24 closure head center disc.

B. Record of Filler Wire Qualification Test - WF 232, copy enclosed.

This record is applicable to the RACO Mn-Mo-Ni wire (heat no. 8T3914) and Linde 80 flux (lot no. 8790) combination for the following ferritic welds in the Davis-Besse 1 reactor vessel:

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1. WR-2 Mk 169 nozzle belt to Mk 170 intermediate shell.
2. WR-34 Mk 171 lower shell to Mk 181 lower head dutchman.
3. WR-12 Mk 182-1 inlet nozzle between "X-Y axis" to Mk 169 nozzle belt.  
  
Mk 182-2 inlet nozzle between "W-Z axis" to Mk 169 nozzle belt.  
  
Mk 182-3 inlet nozzle between "W-X axis" to Mk 169 nozzle belt.  
  
Mk 182-4 inlet nozzle between "Y-Z axis" to Mk 169 nozzle belt.

C. The following welds are non-ferrous (Inconel) deposits to ferritic base metal or non-ferrous (Inconel) welds between Inconel and stainless steel parts. As such, they are not within the scope of reporting required by NRC Bulletin 78-12B.

1. WR-53 Mk 89-1 nozzle safe end to Mk 176-1 core flood nozzle "Y-axis"  
  
This weld is an Inconel weld of the stainless steel safe end to the Inconel buttered end of the core flood nozzle.)
2. WR-52 Inconel buttering to the terminal end face of the Mk 176-1,-2 core flood nozzles for attachment of safe ends as noted in Item 1 above.
3. WR-46 Mk 92 thru 118 Instrument nozzles (Inconel) to Mk 6 lower head. (The weld is an Inconel alloy deposit).
4. WH-25 Mk 43 thru 55 control rod housing bodies to Mk 24 closure head center disc. (This is a Inconel alloy weld between the Inconel control rod housing bodies to the ferritic closure head.
5. WH-9 Mk 67 control rod housing adaptor flange (stainless steel) to Mk 43 thru 55 control rod housing bodies (Inconel).  
  
(This weld is made using Inconel filler wire).

Test reports for the heats of wire for the above welds are not attached to this letter. However, the test reports are on file in the Quality Assurance Department of our Mt. Vernon, Indiana manufacturing plant, as required by ASME Sec. III code.

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LUKEN TO DOMECK

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MAY 24, 1979

If you require further clarification of the above information, please advise.

Very truly yours,

*R C Luken*

R. C. Luken  
Service Manager

RCL:vlt

cc: D. J. DELACROIX  
D. A. LEE  
T. D. MURRAY  
L. HIAGH

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