PART 21 IDENTIFICATION NO. 80-257-000 COMPANY NAME B & W

DATE OF LETTER 7/18/80 DOCKET NO. 50-404, 50-405, 50-438, 50-439

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ACTION:

PRELIMINARY EVALUATION OF THE ATTACHED REPORT INDICATES LEAD RESPONSIBILITY FOR FOLLOWUP AS SHOWN BELOW:

IE [X] NRR [ ] NMSS [ ] OTHER [ ]

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REV: 7/9/80

Babcock & Wilcox

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July 18, 1980

80-257-000

Mr. Victor Stello, Director
Office of Inspection and Enforcement
United States Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Stello:

Pursuant to the requirements of 10CFR21 this report, in three copies, is made concerning the possibility that improper installation in both power channels of the Essential Instrument Control (ECI) Systems of the Bailey Control Company current or voltage buffer cards PN6624610, in Bailey Control Company 820 buffer modules could result in loss of power to both channels of the ECI system.

This letter describes the generic implications of a problem which was discovered following the Crystal River 3 incident earlier this year.

Specific corrective actions regarding the integrated control systems and the non-nuclear instrumentation systems were taken promptly following the CR-3 event.

ECI systems have been or are contracted for supply to:

Virginia Electric & Power Co. (VEPCo) - North Anna 3 and 4

Washington Public Power Supply Systems (WPPSS) - WNP 1/4

Tennessee Valley Authority (TVA) - Bellefonte 1 and 2

Portland General Electric (PGE) Undesignated site

The ECI as supplied by B&W while referred to for convenience as a system is not a true system but a composite of instruments and controls hardware which performs diverse functions and when combined with balance of plant instruments and controls hardware can provide to the operator during or after a design basis accident:

1. Critical parameters to ascertain that a specific accident has taken place and to perform required control functions after automatic protection system action has taken place (from control room only)

2. Indication and controls so that the operator can shutdown and maintain the reactor in a hot shutdown condition from the control room or from outside the control room

The 820 buffer modules with PN6624610 buffer cards are also used in both power channels of the Auxiliary Shutdown Panel, Essential Metering System at the Toledo Edison Company's Davis Besse plant. This auxiliary shutdown panel at Toledo Edison Company's Davis Besse plant is the panel in the above description that performs the hot shutdown function described in item 2 above from outside the control room.

The buffer cards and the 820 buffer modules are also used in the ESFAS system of the B&W units of Sacramento Municipal Utility District and Arkansas Power & Light. The cards in the ESFAS systems of SMUD and Arkansas are only used in power channel B; therefore improper insertion cannot cause loss of function of the ESFAS system. A failure, however, puts the failed channel in a tripped state, but does not preclude ESFAS actuation.

It is possible to interpret a statement in the Bailey Control Company product Instruction Book E92-79 for input buffer cards to mean that these cards may be replaced without removing the buffer module. It may be possible during field changes to improperly install at least one card in each of the power channels resulting in a potential loss of power to both channels. While it is equally possible to install the buffer cards properly without removal of the buffer module, removal of the buffer module prior to installation of the card permits visual inspection to assure proper installation. For this concern to lead to a problem having safety significance, however, it would be necessary to postulate improper installation in both channels, a situation in which ECI is needed - such as a small break, and then shorting of both channels during the time of need. This is considered to be of sufficiently low probability that it is considered marginal as a reportable safety concern.

The cause of this concern is the possible ambiguity in the wording of the Product Instruction Book, E92-79, describing replacement of buffer cards in the buffer modules.

Corrective action will consist of rewording of the maintenance instructions and will be considered complete on delivery of the reworded instruction books to the affected utilities.

The revision will instruct that the buffer module be removed prior to buffer card insertion so that visual inspection can confirm proper installation.

For TECO, TVA and VEPCo plants reworded instruction books will be provided as soon as available.

For the PGE and WPPSS projects the ECI system has not been released for manufacture so no instruction books have been provided. For these two projects, corrective action will be to assure the properly worded instruction books are provided when the ECI system is released for manufacture.

As mentioned above for the operating plants affected, SMUD, AP&L, and Toledo Edison Company's Davis Besse Unit, the following actions were taken earlier this year.

1. Issued site instruction informing the utility of the potential problem.

2. The site instruction includes interim instructions and procedures with respect to module/card replacement, adjustment and maintenance.

Non-operating plants under construction or under contract, but in suspension, are being notified of this concern prior to providing the reworded instruction book.

Mr. D. E. Guilbert, Vice-President, Nuclear Power Generation Division of Babcock & Wilcox Company was informed of this reportable concern on 7/17/80.

This letter confirms our telephone conversation on the subject on 7/18/80.

Very truly yours

James H. Taylor
Manager, Licensing

JHT/fw
cc: Mr. R. B. Borsum- B&W (Bethesda Office)