

November 29, 1979

Mr. James P. O'Reilly, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Serial No. 474A
PSE&C/MGD:mac:wang

Docket Nos. 50-404
50-405

Dear Mr. O'Reilly:

In accordance with 10CFR50.55(e), we notified the NRC, Region II, on July 28, 1978 that a hydraulic model test of the North Anna Units 3 and 4 recirculation spray pumps and cans had indicated adverse vortex action at the pump suction and unstable flow into the first stage impeller. We forwarded our final report concerning this matter in our letter Serial No. 474 dated August 18, 1978. Our final report stated a modification to the pump suction had been developed to alleviate the unstable flow and vortices, and that this modification had been completely tested with acceptable results. Our final report briefly described this modification as a cylinder, with four internal straightening vanes, which was bolted to the pump suction bell.

Subsequent to our final report, discussions with the pump vendor indicated the manufacturing of the pumps and suction modifications could be facilitated by providing a different suction device. This revised modification consisted of a flat plate with four straightening vanes attached to the pump below the suction bell, and a ring or "washer" welded to the can at the pump suction. A variation of this proposed design had been tested during the development of the cylindrical suction device, but was discouraged by the vendor in favor of a device that could be bolted to the suction bell. Further testing of the cylindrical device revealed certain design tolerances of the device that were required for acceptable operation. The vendor indicated these tolerances would make manufacturing more difficult, so the flat plate device was developed in order to avoid the anticipated manufacturing difficulties of the cylindrical device.

The flat plate device was constructed by LaSalle Hydraulic Laboratory, installed on the model and thoroughly tested with acceptable results. Results of the model testing of this modification are available.

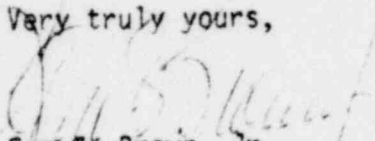
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Both pump suction modifications are acceptable. Due to the more desirable construction aspects of the flat plate suction design, a device of this type will be provided on the recirculation spray pumps/cans.

If you have any questions, please contact this office.

Very truly yours,



Sam C. Brown, Jr.

Senior Vice President - Power Station
Engineering and Construction

cc: Mr. Victor Stello, Director
Office of Inspection & Enforcement

✓ Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation

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