UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 9 1979

MEMORANDUM FOR: V. Noonan, Chief, Engineering Branch, DOR

THRU: G. Lainas, Chief, Plant Systems Branch, DOR

FROM: F. Clemenson, Plant Systems Branch, DOR

SUBJECT: TRIP REPORT TO VELAN ENGINEERING CORPORATION, MONTREAL CANADA, APRIL 2 - 4, 1979 (TAC 11546)

At R. Vollmer's request, Fred Clemenson made a trip to Velan Engineering Corporation in order to investigate the reported weight discrepancies of their swing check valves as discussed in I&E Bulletin No. 79-04 dated March 30, 1979. The visit was coordinated to coincide with the scheduled plant visit by William Kelley, Region IV, on April 3 and 4. Meetings were held with Mr. A. K. Velan, President, and numerous company representatives. The following information was obtained.

1. They currently are collecting and reviewing the available weight data on all nuclear valves that they have manufactured from 1968 to the present. This review includes gate, globe and check valves ranging in size from 2 inches up to their largest size (24 inches), and the numerous different type actuators associated with the valves such as Limitorque, air cylinders and diaphram actuators. It was pointed out that the lapsed time interval between placement of the order for a valve and the actual installed plus operational status of the valve is a variable but typically it is on the order of seven years and that was part of the reason for the review going back to 1968.

2. Using valve drawing dimensions and actuator weights supplied by its vendor, they are calculating the weight of the valve assemblies and in those cases where a similar valve is available they are weighed. By means of tables they are tabulating the weights (1) previously given on their drawings; (2) the calculated weight obtained during this

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effort; and (3) the actual measured weight on those valves that exist in the plant.

3. By means of a TWX on April 4, 1979, Velan Engineering notified the purchasers of their nuclear valves of their effort to establish the weights of the valve assemblies. The TWX, we were given to understand, also committed Velan to complete this review by April 23, 1979 at which time they will notify the purchasers of all valves whose weight significantly exceeded that previously supplied. Whereas it was not firmly established they indicated that presently they were thinking that a weight increase of 15% would be considered significant.

4. The purchasers of Velan Engineering Corporation valves apparently included a number of companys and would involve a considerable number of nuclear plants (number of plants not yet fully established).

5. Apparently for all purchasers, except Westinghouse, they could relate a given purchase order to a group of plants.

6. In the case of some of the older Westinghouse orders, Westinghouse apparently maintained their own inventory of Velan valves. The valves were drawn from the inventory and sent to the Westinghouse plants as needed. Consequently, for the older Westinghouse orders, to establish where a specific Velan valve is installed it will be necessary to combine Velan data with Westinghouse records.

7. Mr. Velan pointed out some of the older valves were purchased and installed before valves were categorized as being Class I, II, & III. Therefore, they could not state what type of plant systems their valves were installed in. But the various reactor plants through their own records plus the Velan's information could establish this information.

8. They expressed the opinion that the vendor supplied actuator weights were generally correct or errored on the conservative side.

9. Whereas the weight review has not yet been completed, Velan felt there would not be a large number of valves whose previously stated weight would be significantly less than that previously indicated.

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10. Velan Engineering Corp. pointed out, (upon seeing a copy of the I&E Bulletin 79-04) that they were requested to estimate or state the largest known weight discrepancy for the swing check valves. It was their belief that the stated maximum weight discrepancies only applied to a small number of these valves.

11. It is not possible to reduce the results of their review to a few simple tables or statements because of the many actuators that can and have been mounted on a given valve type, size, and pressure rating plus changes in code requirements and valve design changes that have taken place over time.

12. For their current generic manually actuated gate and globe valves plus swing check valves ranging in size from 2-1/2 inch up to 24 inches, they provided a preliminary drawing tabulating the overall dimensions and weights.

13. It would appear that the Velan Engineering Corporation is being quite responsive to resolving the concerns regarding the weights of all their nuclear valve assemblies.

14. Mr. Velan explained how they are setting up a system to systematically keeping records of the principle parameters such as valve types, overall dimensions of manufactured valve assemblies, weights, types of actuators on their newly developed line of generic valves. One preliminary drawing which illustrates how this information is being recorded was supplied us during the plant visit.

15. Prior to making the plant visit the question was raised if the weight discrepancies was due to a switch from forgings to castings. It was indicated the bulk of their valves were forgings. Further, it was explained that to some extent the increase in forged valve weights was attributable to dimensional changes in Code requirements (MSS-SP66 or ANSI-B16.5 to ASME Section III).

16. The Velan Engineering Company catalog indicates that Velan forged nuclear valves have been selected for 66 percent of the worlds nuclear power reactors committed as of January 1975.

17. As with the Westinghouse QA program, Velan confirmed that the purchase specifications and code requirements did not require that the weights of the various valve assemblies be established or supplied.

18. It should be noted that the assistance of Mr. W. Kelley, Region IV, I&E inspector, was most helpful in obtaining information on the present status of valve weight discrepancies.

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