

# Jersey Central Power & Light Company



MADISON AVENUE AT PUNCH BOWL ROAD • MORRISTOWN, N. J. • JEFFERSON 9-6111

July 21, 1972

Mr. James P. O'Reilly  
Director, Division of Compliance  
U. S. Atomic Energy Commission  
Region 1  
970 Broad Street  
Newark, New Jersey 07102

Dear Mr. O'Reilly:

Subject: Oyster Creek Nuclear Generating Station  
AEC Docket No. 50-219, Valve Wall Thickness  
Verification -- Plans and Schedule

U. S. Atomic Energy Commission letter dated June 22, 1972, requested that we provide verification that valves within the reactor coolant system boundary, as defined in 50.55(a) of 10CFR50, meet the minimum wall thickness requirements of specified codes and standards. The purpose of this letter is to inform you of our plans and schedule for verifying valve wall thickness and maintaining the records of the pertinent data at the site, in compliance with your request.

As outlined in your letter for the Oyster Creek Nuclear Station, data will be obtained for valves over 1-1/4 inch nominal pipe size in piping normally containing water during operation, and for valves over 2-1/2 inch nominal pipe size normally containing steam during operation.

We have made a preliminary review of the portions of those systems falling within the reactor coolant system boundary and have determined that approximately ninety (90) valves lie inside this boundary, using the size divisions given in your letter. We are in the process now of reviewing design and procurement data and quality assurance documentation pertinent to the wall thickness requirements for these valves.

Our records indicate that we have thickness measurements of the pressure retaining members for sixteen (16) safety valves which are included in the total of ninety (90) valves mentioned above. These records are now being evaluated and will be available for review by your representative by the end of August.

GPU Service Corporation is in the process of developing ultrasonic equipment for the thickness measurement of valves, with particular emphasis on

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cast stainless steel valves, since these are considered to be the most difficult on which to obtain meaningful results. Preliminary results of the development efforts indicate a high probability that this special equipment will be capable of measuring the thicknesses of all of the types of valves for which measurements are required. Thus, we believe we will be able to obtain the necessary data without requiring disassembly of any valve, and are planning our program on this basis. However, we wish to point out that, because of technical limitations, the accuracy of the ultrasonic method for measuring wall thicknesses may not fall within the two (2%) percent limit specified in your letter. We will accumulate data to substantiate the accuracy we believe we can consistently demonstrate, which will probably be in the neighborhood of five (5%) percent. We believe that, considering the margins included in code specified valve wall thickness requirements, an accuracy of about five (5%) percent is adequate.

A review of the quality assurance documentation and of the data obtained thus far indicates that many of the valves fall in specific groupings - i.e., same design and manufacturer and purchased at the same time. In many cases dimensional checks were made on the valves prior to shipment (although actual physical measurements were not recorded in the documentation since such data were not required to be reported by the codes or standards specified in the purchase orders). On the basis of this review, we believe a sampling plan, wherein measurements are made on selected valves which are representative of all valves of that same design, can provide with good assurance the valve wall thickness applicable to all valves of that design. Therefore, we expect to follow a sampling plan when the reactor is shutdown for refueling for those valves inside the drywell that are in high radiation areas. Excluding the sixteen (16) safety valves, approximately forty-five (45) valves are inside the drywell and thirty (30) valves are outside the drywell. We consider, based on a review of the valve designs involved, that measurements on approximately ten (10) of the valves inside the drywell and on all of the valves outside the drywell will provide data representative of all the pertinent valves.

We plan to make preliminary thickness measurements using the special ultrasonic equipment on some valves outside the drywell sometime this year. These measurements will provide us with information for planning the work involved in performing the measurements on the applicable valves. As a minimum we expect to make a portion of the measurements during each of our annual refueling periods and complete the measurements within the three year period specified in your letter.

In carrying out this program, any valves found having a wall thickness

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less than that required by code will be evaluated for adequacy in its intended application. Records of these engineering evaluations and disposition of the valves will be kept at the site and the pertinent information will be forwarded to you as requested in your letter.

Very truly yours,

*Ivan R. Finfrock, Jr.*  
Ivan R. Finfrock, Jr.  
Manager, Nuclear Generating  
Stations

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