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October 25, 1984

Dr. Thomas E. Murley, Regional Administrator
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, Pennsylvania 19406

Subject: Error found in Calorimetric Calculations at R. E. Ginna
Docket No. 50-244

Dear Dr. Murley:

On September 20, 1984, a review was being performed of a 1977 design analysis dealing with the accuracy of the secondary system calorimetric calibration. This review was part of a performance audit being conducted by the New York State Public Service Commission. As a result of this review it was discovered that the number used in the calorimetric equation for non-reactor heat inputs was in error in the non-conservative direction by approximately two-tenths of one percent (.2%).

The non-reactor heat inputs are derived from the algebraic sum of various components and support systems that either add heat to the reactor coolant system or remove heat from it. Examples of these components include the reactor coolant pumps, charging, letdown, seal injection, seal return, reactor vessel support cooling, pressurizer heaters and ambient losses. The 1977 design analysis established this number as 17.574×10^6 BTU/hr. A further investigation revealed that a 1969 initial plant heat rate test established this number at 22.241×10^6 BTU/hr.

The 1969 initial plant heat rate number was converted to a percent of licensed reactor power and subtracted for the calculated calorimetric power. The percent of licensed power was based on the then licensed power level of 1300 thermal megawatts. This number computed to be .50127 percent and for conservative measures .5 percent was used in the calculation. On March 1, 1972, licensed thermal power rating was increased to the present day 1520 thermal megawatts. Since the change in thermal rating does not significantly affect the non-reactor heat inputs, a reduction in the percent of thermal power inputted from non-reactor heat inputs should have resulted. Contrary to this, no reduction occurred and the calorimetric calculation has been in error ever since.

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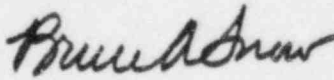
DATE October 25, 1984
TO Dr. Thomas E. Murley

On September 21, 1984, the Plant Superintendent requested that the Technical Manager and the corporate nuclear engineer review these calculations again before any action would be taken. This re-review yielded the same result; i.e. that the calorimetric was in error by approximately .2% in the non-conservative direction. The results of the re-verification did not change. It was recommended that the power level be immediately reduced by approximately .2% and that the calorimetric procedure be changed to reflect a conservative number for the non-reactor heat input. This new conservative number was computed from the 1977 design analysis assumption of 17.574×10^6 BTU/hr. with an additional 10% uncertainty factored in. The net result was that .3% of 1520 megawatts should be used as a conservative estimate of the non-reactor heat inputs.

This event was then reviewed relative to the reporting criteria as set forth in 10CFR50.72 and 10CFR50.73. It was determined by the Plant Operations Review Committee (PORC) with concurrence received from your Resident Inspector that this event was not reportable under either 10CFR50.72 or 10CFR50.73 criteria. However, the PORC decided that because of the nature of this event a formal written report should be forwarded to your office.

Subsequent to this report a detailed analysis of the non-reactor heat inputs will be performed and adjustments made as necessary to the calorimetric procedure.

Very truly yours,


for Roger W. Kober