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October 16, 2009

U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**ATTENTION:** Document Control Desk

**SUBJECT:** R.E. Ginna Nuclear Power Plant  
Docket No. 50-244

**Response to Request for Additional Information Associated  
With Inservice Test Program Relief Request Number PR-01**

- References:
- (1) Letter from P. Swift, Ginna LLC, to NRC Document Control Desk, Subject: Fifth Ten-Year Inservice Test Program for Safety-Related Pumps and Valves, dated September 11, 2009.
  - (2) Letter from D. Pickett, NRC, to J. Carlin, Ginna LLC, Subject: Request for Additional Information (RAI) Re: Relief Request No. PR-01, Revision 0, for the Fifth 10-Year Inservice Testing Interval – R.E. Ginna Nuclear Power Plant (TAC NO. ME2239), dated October 6, 2009.

On September 11, 2009 R.E. Ginna Nuclear Power Plant, LLC (Ginna LLC) submitted relief request PR-01 associated with the Fifth Ten-Year Inservice Test Program for Safety-Related Pumps and Valves (Reference 1). On October 6, 2009 the NRC responded to that submittal with a request for additional information (Reference 2). Enclosed please find the response to the staff's question.

There are no regulatory commitments contained in this letter. Should you have questions regarding this matter, please contact Thomas Harding (585) 771-5219, or [thomas.hardingjr@constellation.com](mailto:thomas.hardingjr@constellation.com).

Very truly yours,

A handwritten signature in black ink that reads "Paul M. Swift". The signature is written in a cursive, slightly slanted style.

Paul M. Swift

Attachment: Response to Request for Additional Information Associated With Relief Request Number PR-01

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cc: S. J. Collins, NRC  
D. V. Pickett, NRC  
Resident Inspector, NRC

**ATTACHMENT**

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**Response to Request for Additional Information Associated With  
Relief Request Number PR-01**

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## ATTACHMENT

### Response to Request for Additional Information Associated With Relief Request Number PR-01

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#### Question

*It is the NRC staff's understanding that the diesel fuel oil transfer pumps PDG02A and PDG02B are positive displacement pumps. Please explain how the proposed alternative testing methodology utilizing the accuracy in design analysis EWR 4526-ME-20 meets the recommendations as described in NUREG-1482, Revision 1, Section 5.5.2.*

#### Response:

Ginna's diesel fuel oil transfer pumps, PDG02A & PDG02B, are positive displacement pumps.

The flow rate for these pumps is determined by measuring the indicated level change in the diesel generator fuel oil day tank during a timed pump run and converting this data into fuel oil transfer pump flow rate for both the Group B and comprehensive pump tests.

Level Gauges LG-2044 ("A" E D/G) and LG-2045 ("B" E D/G) are utilized to measure the change in indicated level while the fuel oil transfer pump is running and restoring fuel oil day tank level. Both LG-2044 and LG-2045 (sight glasses equipped with a reference scale in inches of level) have a range of indicated level of 9 inches (2.5 inches to 11.5 inches).

The respective day tank is drained to an initial indicated level of 5.0 to 5.5 inches before initiating the fuel oil pump start. This level is logged as the initial level. The pump is then started coincident with starting the stopwatch and the system allowed to stabilize. A minimum 2 minute stabilization period is observed for the comprehensive test.

Following a total minimum run time of 5 minutes (or exceeding an indicated tank level of 11 inches), the pump is stopped coincident with stopping the stopwatch and the day tank level is read in inches to the nearest 0.25 inch. This level is logged as the final level.

The change in day tank level is determined in inches and then converted to total gallons pumped using the constant conversion factor of 24.76 gallons per inch. The constant of 24.76 gallons per inch of indicated level on the day tank sight glass was established by EWR 4526-ME-20 based on the tank's geometrical dimensions.

The total gallons pumped is then divided by the total pump run time to arrive at the pump test flow rate in gallons per minute (gpm). This calculation is documented in the pump test procedures.

The test circuit for each pump is a fixed flow path from the storage tank (pump suction) to the day tank (pump discharge). Pump suction pressure is nearly constant because of the very small change in storage tank level. This change in suction pressure during pump operation is considered negligible. The normal rise in day tank level is approximately 5.5 inches, which corresponds to a quantity of approximately 136 gallons pumped during the 5 minutes of pump operation, resulting in a typical flow rate of approximately 27 gpm. The current flow rate reference values of each pump are as follows: PDG02A - 27.2 gpm, PDG02B - 27.1 gpm.

## ATTACHMENT

### Response to Request for Additional Information Associated With Relief Request Number PR-01

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The small rise in day tank level during pump operation does not affect pump discharge pressure or flow rate. This conclusion is supported by the discussion in NUREG 1482 Rev.1, section 5.5.2, where the NRC states: "Pump discharge pressure will match system pressure up to the shutoff head of the positive displacement pump. Because of the characteristics of a positive displacement pump, there should be virtually no change in pump discharge flow rate as a result of the rising tank level. Therefore, rising tank level will not have an impact on test results. By having approximately the same level in the tank at the beginning of each test, licensees can achieve repeatable results."

The accuracy of level gauges, LG-2044 and LG-2045, is determined using the nine (9) inch indicated range of level and the constant of 24.76 gallons per inch. This yields a total volume change of 222.84 gallons. Based on a readability uncertainty of +/- 0.125 inch (0.25 inch scaling), which is equivalent to 3.10 gallons, divided by the total indicated volume of 222.84 gallons, the overall accuracy of the sight glass is +/- 1.39%.

In addition, the stopwatch used to measure the time the pump is operating and pumping fuel oil is accurate to within  $\pm 0.6$  seconds per minute for a calibrated accuracy of  $\pm 1.0\%$ . Combining the accuracies of the level gauge sight glass and stopwatch, using the square root of the sum of the squares method, results in an overall indicated accuracy of  $\pm 1.71\%$ . This overall accuracy is unchanged from that which relief was granted for during the 4<sup>th</sup> 10-year interval IST program.