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 JOHNSON, A.R. Project Directorate I-3

SUBJECT: Forwards Relief Request PR-12 re use of calibr flow instrumentation installed in containment recirculation fan cooler outlet piping, per Svc Water Sys Outlet Piping Instrumentation Insp Rept 50-244/91-201.

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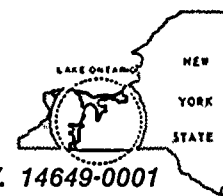
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September 23, 1992

U.S. Nuclear Regulatory Commission
Document Control Desk
Attn: Allen R. Johnson
Project Directorate I-3
Washington, D.C. 20555

Subject: Inservice Testing (IST) Program for Pumps and Valves
1990 - 1999 Third 10-Year Interval, Revision 1
R.E. Ginna Nuclear Power Plant
Docket No. 50-244

Ref. (1): SWSOPI Inspection Report 50-244/91-201, 1/30/92

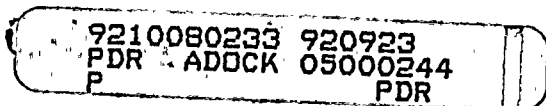
Dear Mr. Johnson:

The purpose of this letter is to inform you of a change in test method for quarterly testing of Service Water (SW) System pumps, to request relief to allow the use of a clamp-on ultrasonic flowmeter for this testing and to withdraw a relief request previously granted, allowing the existing test method for the SW pumps.

Currently, Relief Request No. PR-7 permits the use of calibrated flow instrumentation installed in the Containment Recirculation Fan Cooler outlet piping and the measurement of accident flow rates in order to assess SW pump performance. Although this was the best test method available when the SW pumps were added to the IST Program, a more accurate test method exists and will be implemented as part of RG&E's continuing efforts to improve the IST Program. During their inspection of Ginna's Service Water System in November/December, 1991, the NRC's SWSOPI team encouraged RG&E to adopt the improved test methodology proposed herein.

RG&E will permanently install clamp-on ultrasonic flowmeters on each of the SW pump discharge lines. Quarterly SW pump testing will be conducted at a reference flowrate equivalent to the design flowrate of the SW pumps. Test data recorded at this flowrate will more accurately represent the condition of the SW pump, rather than at the reduced flowrate associated with SW accident flow, since the SW pump is operating nearer to its best efficiency point.

In order to achieve this IST Program improvement, relief is requested from ASME Section XI Articles IWP-4110 and IWP-4120. Attachment 1 to this letter, Relief Request No. PR-12, documents the basis for relief and the alternate test method. Upon approval of PR-12, PR-7 will be withdrawn from RG&E's IST Program submittal.



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Approval for this test method change will further improve the IST Program by permitting the exercise testing of the SW pump discharge check valves (valves 4601, 4602, 4603 and 4604) at the position required to fulfill their safety function. This will remove the need for the sample disassembly program currently in place for these check valves and Relief Request No. VR-17 will also be withdrawn.

Also, this change in test method will permit the reclassification of the twelve manual butterfly valves serving the inlets and outlets to the four containment recirculation fan coolers and the two reactor compartment coolers (valves 4627, 4628, 4629, 4630, 4635, 4636, 4641, 4642, 4643, 4644, 4757 and 4758) from Category A - Active to Category A - Passive. This reclassification will permit the deletion of the quarterly exercise test requirement and an annual position indication test will be added for all twelve manual valves.

RG&E will perform the next quarterly test of the SW pumps employing the test method described herein. This test is scheduled for the first week in November. RG&E respectfully requests a response to the attached request for relief prior to the first week in November in order to meet the Ginna Station test schedule.

Very truly yours,


Robert C. Mecredy

KAM/250
Attachment

xc: Mr. Allen R. Johnson (Mail Stop 14D1)
Project Directorate I-3
Washington, D.C. 20555

U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

Ginna Senior Resident Inspector

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Attachment 1

RELIEF REQUEST NO. PR-12

SYSTEM: Service Water (SW)

PUMPS: Service Water Pumps (PSWO 1A, 1B, 1C, 1D)

SAFETY CLASS: 3

FUNCTION: Supply Station Service Water to equipment and cooling units in the plant.

TEST REQUIREMENTS: Instrument accuracy shall be within the limits of table IWP-4110-1 (IWP-4110). The full-scale range of each instrument shall be three times the reference value or less (IWP-4120).

BASIS FOR RELIEF: The present system configuration and instrumentation does not provide permanently installed flow indication at the SW pump discharge piping to provide a positive means of determining full flow during pump tests. Employing a clamp-on ultrasonic flowmeter to measure full SW pump discharge flow is not currently addressed in ASME Section XI, Subsection IWP (Code).

The Code requires an instrument accuracy of 2 percent of full scale. The clamp-on ultrasonic flowmeter possesses an instrument accuracy of 3 percent of actual flow. Although the percentage error (3 percent of actual flow as compared with 2 percent of full scale) is stated as a larger numerical value, the actual absolute value of instrument inaccuracy at the reference flow rate of 5,600 gpm (approximate SW pump design) is actually less for the clamp-on ultrasonic flowmeter. The accuracy of the reading from a 0-10,000 gpm analog gauge is $5,600 \pm 200$ gpm (2 percent of full scale). The accuracy of the reading from the clamp-on ultrasonic flowmeter is $5,600 \pm 168$ gpm (3 percent of actual flow).

Thus, the actual maximum instrument error of the flow reading, as read on the clamp-on ultrasonic flowmeter, is less than the error as read on the analog gauge at the specified flow rate of 5,600 gpm.

The full-scale range (calibrated) of the clamp-on ultrasonic flowmeter is 40 ft/sec. This corresponds to a flow rate of approximately 17,000 gpm (for 14 inch pipe), which exceeds three times the reference value of 5600 gpm.

Relief is requested since the clamp-on ultrasonic flowmeter yields a more accurate flow reading at the specified SW pump test flow rate of 5600 gpm and since the range of the clamp-on ultrasonic flowmeter meets the requirement of ASME/ANSI OMA-1988, Part 6, Paragraph 4.6.1.2(b) (i.e. reference flow rate < 70% of calibrated range).

This substantial improvement in test method provides for the measurement of a sufficiently accurate and repeatable value for SW pump flow rate. By employing this test method and obtaining the pump's corresponding differential pressure, the hydraulic performance of the SW pump can be more accurately assessed. Repeatability of flow rate measurement will be ensured through the permanent installation of clamp-on ultrasonic flowmeter instrumentation, via the Ginna Station minor modification process.

ALTERNATE TESTING:

SW pump flow testing will utilize a permanently installed clamp-on ultrasonic flowmeter to allow flow rate measurement at a reference flow equivalent to the design point of the SW pumps.