# WOLF CREEK
NUCLEAR OPERATING CORPORATION

Bart D. Withers
President and
Chief Executive Officer

June 29, 1988

WM 88-0169

U. S. Nuclear Regulatory Commission
ATTN: Document Control D
Mail Station P1-137
Washington, D. C. 20555

Reference: WM 88-0100 dated April 14, 1988, from B. D. Withers, WCNOC to NRC
Subject: Docket No. 50-482: Pump and Valve Inservice Testing Program Relief Request

Gentlemen:

The referenced letter submitted relief request PR-11 in response to the Staff's SER for the Inservice Testing (IST) Program for Wolf Creek Generating Station. The attachment to this letter provides additional information for relief request PR-11 as requested in a telephone conversation with the NRC. Revision bars in the margin denote the areas of change.

A copy of this response is also being provided to Mr. H. C. Rockhold of EG&G Idaho, Inc. If you have any questions concerning this submittal, please contact me or Mr. O. L. Maynard of my staff.

Very truly yours,

B D Withers

Bart D. Withers
President and
Chief Executive Officer

BDW/jad

Attachment

cc: B. L. Bartlett (NRC), w/a
D. D. Chamberlain (NRC), w/a
R. D. Martin (NRC), w/a
T. K. McLellan (NRC), w/a
P. W. O'Connor (NRC), w/a (?)
H. C. Rockhold (EG&G), w/a

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1/1

P.O. Box 411 / Burlington, KS 66839 / Phone: (316) 364-8831

**RELIEF REQUEST NO. PR-11**

PUMPS:

PEC01A and B, Fuel Pool Coolant Pumps.

CLASS:

ISI Class 3

TEST REQUIREMENT:

The allowable ranges of inservice test quantities in relation to the reference values are tabulated in Table IWP-3100-2. This table limits the acceptable performance of each pump dependent variable (flowrate or differential pressure) to a maximum of 103 percent of the respective reference value. If the Test Parameter should exceed this limit, it shall be declared inoperative and removed from service. (IWP-3200)

BASIS FOR RELIEF:

The requirement to declare a pump inoperative when a Test Parameter exceeds the reference value by 3 percent is not technically justified, sound engineering judgement, nor acceptable plant operating practice for the following reasons:

- Indiscriminately declaring Safety System Pumps inoperative results in excessive and unneeded testing of other plant Safeguard Systems and Components. Such testing could ultimately detract from the overall reliability of the Plant Safety Systems. In addition, unwarranted testing unnecessarily adds to the burden of the Operations Force and dilutes efforts focused on the performance of their primary duties. Also, Operators are subjected to additional, and unnecessary radiation exposure.

- The case where a Test Parameter exceeds the reference value is not necessarily indicative of pump degradation. It may merely signify that the reference value is probably at the lower side of the statistical scatter of the test data and the specific test in question is on the upper side. Note that the reference values are subject to the same elements of statistical error associated with any other individual test.

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- The 3-percent limitation is overly restrictive when compared to the accuracy of the instrumentation used to gather the test data. Analysis has shown that, in order to consistantly remain below the 3-percent limit, Instrument Loop accuracies in the range 0.5 to 0.75 percent would be required. This presents a significantly more restrictive requirement than that established by Paragraph IWP-4110 ($\pm$2 percent).

- Power Plant Operating Systems are not configured in a manner that provides the laboratory-type conditions demanded to meet the repeatability implied by the 3-percent restriction. Several of the tests require throttling with large Gate or Butterfly Valves using remote manual control. Thus, non-quantifiable System Flow conditions are created that are certain to affect measured test quantities.

- To ensure the reference values do not reflect operations at the lower end of the performance spectrum and, thus, ultimately be reflected in frequently exceeding the upper performance limits as a result of instrument drift, all related instrumentation is calibrated on a frequent basis.

- This requirement provides no additional measure of reliability to the equipment.

- When the upper limits are exceeded, the only reasonable way of correcting the inoperative condition is to conduct an analysis to ensure that the pump is indeed operable and capable of meeting its intended function. When this is done, in accordance with Subarticle IWP-3230(c), a new reference value must be established. Due to the test conditions and methods of testing at WCGS, any change in the reference point eliminates the correlation of future test results with past pump performance. Because, the usefulness of any past data in determining a trend for pump performance is essentially eliminated a primary goal and basis for the Inservice Testing Program could be jeopardized.

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- The design minimum flow for worst case condition in the spent fuel pool is 32,500 gpm. This flow rate correlates to the actual test flow. The system design feature used to compensate for pump degradation is the pump discharge valve. This valve is presently throttled approximately 2/5 open. As pump flow and differential pressure degrade with wear, the valve will be adjusted to maintain the minimum flow.

- The pump vendor (Gould) stated that only the following two plausible situations would result in a dramatic drop in pump head:

  1) A loss in suction pressure causing the pump to go into "full cavitation".

  2) Improper setting of the impeller clearance after pump maintenance. On this model of pump, the suction clearance is crucial to pump performance.

  Both of these situations are unaffected by "time in service" or pump wear. The vendor has no information, either experience based or from test data, to indicate that catastrophic failure in pump performance is likely after degradation of approximately ten percent.

ALTERNATE TESTING:

Pumps will be tested in accordance with Subsection IWP with the following exceptions:

a) The required action range (HIGH) will be above a value equal to 108 percent of the reference value for test quantities flowrate and differential pressure; and

b) The Alert-range (HIGH) will be above a value equal to 105 percent of the reference value for test quantities of Flow Rate and differential pressure.