

Docket No. 50-395

MAY 26 1988

DISTRIBUTION

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Docket File
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Dear Mr. Nauman:

SUBJECT: REQUEST FOR MEETING TO DISCUSS INSERVICE TESTING PROGRAM FOR
THE V. C. SUMMER STATION (TAC NOS. 49976 & 68046)

As a result of our April 19, 1988 letter to you, which transmitted our Safety Evaluation on your Inservice Testing (IST) program, telephone conference calls were held on May 2 and May 4, 1988 with members of your staff, the NRC staff, and our contractor's staff (EG&G). The purpose of these conference calls was to provide additional clarification and information to your staff on the basis of our positions with respect to our denial of your request for relief from the ASME Code and NRC Regulations. At the conclusion of the May 4, 1988 conference call, it was agreed that you would reevaluate your IST program and your relief requests. These would be evaluated specifically in terms of your program not trending valves with quick closure time and your utilization of Appendix J leak rate test data in lieu of leakage data gathered from testing individual components as required by the ASME Code. In addition, it was agreed that EG&G would review the IST program submitted in your December 23, 1987 letter that was not addressed in our Safety Evaluation in the April 19, 1988 letter.

EG&G has completed its review, and, as a result of this review, we believe that a meeting is necessary to resolve issues involving the IST program. We would like to schedule a meeting at the earliest possible date to resolve these issues in an adequate timeframe before your September 16, 1988 refueling outage. We would like to suggest a tentative date and time for this meeting as June 1, 1988 at 8:00 a.m. at the NRC offices in Rockville, Maryland. The discussion would focus on those items presented in the Enclosure to this letter.

Sincerely,

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PDR ADDCK 05000395
P PDR

John J. Hayes, Project Manager
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Division of Reactor Projects I/II

Enclosure:
Inservice Testing Program
Review

cc w/enclosure:
See next page

EM

OFC	: LA: PD21: DRPR: PM: PD21: DRPR: EMEB: DEST	: D: PD21: DRPR :	:	:
NAME	: PAnderson	: JHayes: clh	: TMarsh	: EAdensam
DATE	: 5/25/88	: 5/25/88	: 5/25/88	: 5/24/88

Mr. C. A. Nauman
South Carolina Electric & Gas Company

Virgil C. Summer Nuclear Station

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VIRGIL C. SUMMER NUCLEAR STATION
PUMP AND VALVE INSERVICE TESTING PROGRAM REVIEW
MAJOR CONCERNS AND COMMENTS

1. The Virgil C. Summer Nuclear Station pump and valve inservice testing (IST) program, dated December 23, 1987, is based on the 1977 Edition, Summer 1978 Addenda of the Code. The pump and valve programs submitted in March, 1983, were based on the 1980 Edition, Winter 1980 Addenda of the Code. The licensee did not provide a reason for this change of Code Edition nor have they identified which Edition should be used per the requirements of 10 CFR 50.
2. The V. C. Summer IST program, dated December 23, 1987, does not provide pump or valve listing tables that identify all of the components that are tested by the program and provide some basic testing information for each component. The pump table should list all safety related pumps, the parameters that are measured, the frequencies at which they are measured, and any notes or relief requests that apply. The IST program should have a valve table that lists each valve that performs a safety function, its Code category, descriptive items such as valve type and actuator type, P&ID and coordinates, the specific testing performed, the frequencies at which the testing is performed, and any notes or relief requests that apply. This information is necessary for the reviewer to determine the adequacy and completeness of the IST program.
3. The licensee has incorrectly categorized many of the valves listed in the relief requests of the December 23, 1987 IST program. The valves in the V. C. Summer IST program should be categorized in accordance with the definitions provided in IWV-2200. The NRC staff position is that all valves that are Appendix J, Type C, leak rate tested should be included in the IST program as category A or A/C valves.
4. Due to the problems associated with measuring the stroke times for valves which stroke rapidly, the NRC will grant relief from the trending requirements of IWV-3417(a) for rapid-acting valves. The NRC identifies

rapid-acting valves as those that stroke in less than 2 seconds, and in order to obtain relief, the licensee must assign a limiting value of full-stroke time of 2 seconds to these valves and perform the corrective actions of IWV-3417(b) if the 2 second limit is exceeded.

In the December 23, 1987 IST program the licensee submitted 44 separate ISI Valve Relief Requests that requested relief from the requirements of IWV-3417(a) for valves that stroke in ≤ 10 seconds and assigned limiting values of stroke times for these valves of from 5 to 25 seconds. These relief requests do not comply with the NRC staff position for rapid acting valves and relief should not be granted as requested. In regards to these valves, the licensee must submit a relief request for rapid acting valves that conforms to the above staff position or they must comply with the requirements of IWV-3417(a).

5. The purpose of the limiting value of full-stroke time for power operated valves is to establish a limit above which a degraded valve is declared inoperable and repaired before it is incapable of performing its safety function. The limits should be set so a valve will be repaired when it becomes degraded to a point where there is an increased probability that it may not perform its safety function. The methodology the licensee employs for setting the maximum stroke time limits for power operated valves as explained in Attachment VII of GTP-302, is not considered acceptable because it could set limits for valves that are sufficiently high that the valves could be seriously degraded or fail before reaching their limit. For example, a motor operated valve that normally strokes in 31 seconds would have a maximum stroke time limit of 65 seconds; long before there is sufficient binding or degradation to increase the stroke time to 65 seconds, the torque limit switch would trip, a breaker or overload would trip, or the motor operator would be damaged, thereby rendering the valve incapable of performing its safety function.
6. The licensee has developed a system of evaluating the stroke times of power operated valves based on a calculated valve performance factor and has proposed to use this performance factor to determine corrective actions for power operated valves instead of the requirements of

IWV-3417(a). The NRC staff has approved alternate methods of establishing criteria for increased valve testing where the licensee's proposed alternative provided an acceptable level of quality and safety, however, it is not felt that the alternate testing proposed in the December 23, 1987, submittal is equivalent to the Code requirements nor does it provide an acceptable level of quality and safety.

7. In GMP-103.001 the licensee states that pump reference values can take the form of "broad band" baseline data depending on the pump and system operating conditions. The NRC staff has approved this approach for pump differential pressure and flow rate in the past, however, the use of this methodology is considered a deviation from the Code requirements and a request for relief should be submitted for each specific case where it is used. Since the pump allowable ranges are based on the reference values, the licensee should clearly explain how the allowable ranges are determined and tracked for cases that employ broad band baseline data.
8. In GMP-103.001 the licensee states that pump test data trending shall be performed within 3 months after the pump test is performed and that valve stroke time trending will be performed no greater than 3 months after the stroke time test is performed. This is apparently in conflict with the Code which requires analysis of pump test data within 96 hours of measurement. Also, if exceeding conditions specified by IWV-3417(a) require that the test frequency of a valve be increased to monthly, delaying the trending of the stroke time data for up to 3 months could result in non compliance with the Code.
9. Section XI, IWP-3230(a), requires that if pump measurement deviations fall within the alert range of Table IWP-3100-2, the frequency of testing specified in IWP-3400 shall be doubled until the cause of the deviation is determined and the condition corrected. In their discussion about acceptance criteria in GPM-103.001 the licensee failed to mention the alert ranges for the pump test parameters. It is unclear if the licensee is complying with the requirements of IWP-3230(a). Also, the 1977 Edition of the Code requires monthly pump testing, so

doubling the testing frequency would require testing alert range pumps every two weeks under that Edition of the Code.

10. The following items deal with valve relief requests in the December 23, 1987, submittal:

- a. Relief Request J.5 for XVG-8948A, 8948B, 8956A, 8956B, and 8956C, the accumulator discharge check valves, is similar to the relief request evaluated for those valves in Section 3.5.2.5 of the V. C. Summer TER dated January 7, 1988. In the previous relief request the licensee stated that exercising these valves with flow during refueling outages could damage the reactor internals due to the large volume of high pressure water. J.5 indicates that these valves will be exercised to the position required to fulfill their safety function during refueling outages, however, it doesn't specify how this is to be accomplished. Damaging the reactor internals when maximum safety analysis flow is established through these valves is a valid concern that should be addressed by the licensee.
- b. Relief Request J.8 for XVC-8926, the check valve in the line from the RWST to the centrifugal charging pump suctions, states that these valves will be tested at cold shutdowns. The previous relief request for this valve was analyzed in Section 3.5.4.1 of the V. C. Summer TER dated January 7, 1988, and the licensee used the concern of insufficient expansion volume which could lead to a low-temperature overpressurization (LTOP) as a basis for not full-stroke exercising this valve during cold shutdowns. This still appears to be a valid concern, therefore, the licensee should explain how maximum safety analysis flow can be established through this valve without causing or contributing to an LTOP.
- c. The licensee previously requested relief for XVC-8481A, 8481B, and 8481C, the centrifugal charging pump discharge check valves, which was analyzed in Section 3.2.1.1 of the V. C. Summer TER dated January 7, 1988. In that relief request the licensee used the

basis that the valves could not be exercised during normal operations because it would require establishing full charging flow into the RCS which could cause an overpressure condition and possible reactor trip. They also stated that these valves could not be exercised during cold shutdowns because establishing full charging flow into the RCS could cause or contribute to a low-temperature overpressurization (LTOP). This still appears to be a valid concern, therefore, the licensee should explain how maximum safety analysis flow can be established through these valves quarterly during power operations.

- d. The licensee also included the following new relief requests in the December 23, 1987 submittal. A more detailed technical justification or further clarification is necessary for approval for all of these relief requests except N.3.

<u>Relief Request</u>	<u>Valves</u>
A.5	XVG-9627A, XVG-9627B
A.6	XVC-9680A, XVC-9680B
B.11	XVT-8102A, XVT-8102B, XVT-8102C
C.5	XVC-1016
F.2	XVC-2661
G.4	XVC-2876A, XVC-2876B
K.3	XVC-3006A, XVC-3006B, XVC-3013A, XVC-3013B
N.3	XVB-0001A, XVB-0001B, XVB-0002A, XVB-0002B
T.6	XVX-6524A, XVX-6524B, XVX-6524C

11. The following items deal with pump relief requests in the December 23, 1987, submittal:

- a. Pump relief requests E.2, E.3, and E.4 are new in the December 23, 1987, submittal. Requests E.2 and E.3 are not in accordance with the NRC staff positions and should not be approved as submitted. The proposed alternative in Relief Request E.4 appears to provide an acceptable level of quality and safety and may be acceptable.

- b. The following pump relief requests are generally unchanged from those evaluated in the TER and the same evaluations would apply:

<u>Relief Request</u>	<u>SER Section</u>	<u>Pumps</u>	<u>Comment</u>
E.1	2.1.1	All in IST program	Relief denied
A.1	2.2.1	DG fuel oil transfer	Relief denied
B.1	2.3.1	Service water booster	Relief denied
B.2	2.4.1	Service water	Relief approved
C.1	2.5.1	Boric acid transfer	Relief denied
D.1	2.6.1	Charging/safety injection	Relief denied