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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFTY AND LICENSING BOARD

Before Administrative Judges:

Morton B. Margulies, Chairman
Gustave A. Linenberger, Jr.
Dr. Oscar H. Paris

In the Matter of	Docket Nos. 50-424-OL 50-425-OL
GEORGIA POWER COMPANY, et al	(ASLBP No.84-499-01-OL)
(Vogtle Electric Generating Plant, Units 1 & 2	October 8, 1986

SUPPLEMENTAL INFORMATION

The Boards partial initial decision of August 27, 1986 left open the question of Contention 10.5 (ASCO solenoid valves). This was based in part on the issuance, on August 26, 1986 of Board Notification regarding ASCO solenoid used at Vogtle 1 and 2 (BN No. 86-18). Since the staff and applicants have already responded to the Board concerning this notification, we feel that the Intervenor should be given this opportunity to respond.

In BN No. 86-18 the NRC staff voiced it concerns about the methodology used for testing ASCO solenoid valve exposed to superheated steam following a MSLB accident. The exact nature of this concern was not completely explained, but obviously any factor which would tend to make the analysis of this testing approach more conservative, would raise more concern with the NRC staff.

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Applicants informed the staff that only four ASCO valves (type NP8321, all in the control building) were relevant to BN No. 86-19. Applicants had earlier supplied to Intervenor a list of all qualified ASCO valves at Vogtle (letter dated March 13, 1985 to Ms. Laurie Fowler). This list, labeled attachment C, does not show any ASCO NP8321 valves in the control building. Instead, six NP8321 (models A5E and A185E) are shown in the MSIV area. This discrepancy, which seems to indicate a lack of knowledge by both applicants and NRC staff, casts a serious cloud over the whole issue.

The staffs request questioned the thermal lag methodology used to establish the qualifications of ASCO valves when exposed to superheated steam. Based on applicants reanalysis of the problem, the staff has changed its opinion and now feel the valves are qualified (letter to ASLB dated September 15, 1986 from J. W. Thompson). The thermal lag methodology previously used divided the temperature response into three phases:

1) Temperature rise to saturation temperature.

2) Temperature remaining at saturation point until condensate is vaporized (this was the main point of staffs concern).

3) Temperature rise based on forced convection heat transfer.

In the new analysis, the first two phases are assumed to occur instantaneously. This was accepted by staff, since this is a more conservative approach. However, if the staff was primarily worried about phase two, why would this new more conservative approach satisfy them? The only effect of eliminating all thermal lag would be to possibly raise the actual

final temperature!

Applicants new analysis of the third phase does not agree with the methodology in NUREG-0588, is less conservative and should be rejected. They use the calculated internal temperature of the valve to estimate the surface temperature. Applicants new analysis then shows that the maximum temperature differential across the valve would be no more than 0.8° F, and therefore the surface temperature would be 326° F. Since the "qualification temperature" is 346° F, applicant and staff concluded that the NP8321 valve was qualified for the "worst case environmental conditions following a MSLB outside containment. This qualification temperature was presumably based on Isomedix test data, in which valves were artificially pre-aged, and then subjected to simulated accident conditions. During the pre-aging both of the NP8321 valves tested developed excessive seat leakage. In addition one of the valve allowed spray solution to enter it electrical coil. The accident test conditions included a peak temperature of 346 F (test condition temperature, not valve temperature), pressure of 110 psig, and chemical spray. These conditions were imposed for approximately three hours (see testimony of G. H. Baenteli et al, Feb. 24, 1986, on contention 10.5, p 33-36). Based on these test results I would not conclude with great certainty that the valves were fully qualified to 346 F.

Intervenor would also like to remind the Board of several IE information notices that have shown a continuing history of

problems with ASCO solenoid valves. These would include: 86-57, July 11, 1986, "Operating Problems with Solenoid Valves at Nuclear Plants"; 85-95, December 23, 1985, "Leak of Reactor Water to Reactor Building Caused by Scram Solenoid Valve Problem"; 85-17, March 1, 1985, "Possible Sticking of ASCO solenoid Valves"; 85-08, January 30, 1985, "Industry Experience on Certain Materials Used In Safety-Related Equipment". In all of these cases, ASCO solenoid valves were involved. The latest notice, 86-57, which should be considered new evidence since it was issued after the March 1986 licensing hearing, details a series of valve failures that have occurred recently at several operating nuclear plants. The following general problems were pointed out:

1. High ambient temperature not being monitored.

2. Hydrocarbon contamination from poor quality pressurized air.

3. Chloride contamination from handling, packaging, and storage.

4. Poor maintenance programs in which short lived parts, such as elastomers were not replaced, and poor quality of mechanical overhaul work led to valve failures.

All of these problems go beyond the "simple" qualification of valves in terms of temperature, pressure, radiation, etc. These valves fail repeatedly in the field, and are obviously difficult if not impossible to maintain. Intervenor specifically ask applicants about this maintenance problem (transcript of proceeding, March 13, 1986, p.528 at 2-7, and during discovery)

but in no case was an adequate answer given. Applicants response was simple - we have a maintenance program and it will work. But that is clearly not good enough, in light of the problems with these valves!

Intervenor would also like to point out a serious flaw in both applicants and staffs approach to the environmental qualification program. They both refer in numerous documents to the need to qualify equipment which is used in "safety-related applications". However the applicable standard is equipment "important to safety", which includes all "safety-related" and some "nonsafety-related" equipment. Nonsafety-related equipment whose failure could prevent the satisfactory accomplishment of required safety functions by safety-related equipment must also be included in this program. The Equipment Qualification Branch (EQB) of the NRC is charged with the responsibility for "reviewing information that confirms the operability of equipment <u>important to safety</u> over its entire range of service conditions (i.e., all normal and accident loads), throughout the equipment's installed life". Intervenor feels that it is the responsibility of the ASLB to see that the applicable standard of "important to safety" is carried out by both applicant and staff, and that these parties must review all of their records to see if this has been properly implemented.

For Intervenor GANE and for Intervenor Campaign for a Prosperous Georgia.

Howard Deutsch

Dr. Howard M. Deutsch
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