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October 4, 1983

NUCLEAR PRODUCTION DEPARTMENT

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
License No. NPF-13
File 0260/L-860.0/M-001.0
Instrument Air System
AECM-83/0575

REFERENCES:

1. Letter from T. M. Novak to J. P. McGaughy, dated August 19, 1983.
2. Letter Number AECM-82/490 from L. F. Dale to H. R. Denton, dated October 18, 1982.
3. Letter Number AECM-82/510 from L. F. Dale to H. R. Denton, dated October 26, 1982.
4. Letter Number AECM-82/581 from L. F. Dale to H. R. Denton, dated December 20, 1982.
5. Letter from A. Schwencer to J. P. McGaughy, dated August 11, 1983.

In a letter dated August 19, 1983, (Reference 1), the Nuclear Regulatory Commission (NRC) expressed concern over isolation of the Instrument Air System and the response of certain components and systems supplied by the Instrument Air System. These concerns resulted from NRC evaluation of events reported to the NRC Operations Center by Mississippi Power & Light Company (MP&L). It was requested that MP&L provide a response to these concerns three weeks prior to completing low power testing.

It is important to note that the instrument air system is a nonsafety-related system except for penetrations to the Auxiliary Building, Containment and Drywell, isolation valves, piping between isolation valves, and piping from the containment isolation valve to the ADS air receiver tanks. Components and systems with safety functions are served by the Instrument Air System but are not a part of that system. Furthermore those components are designed to either withstand a loss of instrument air or to fail in a safe condition upon loss of instrument air. Only in the long term following an accident does any component with a safety function need additional air, and in this case, the necessary portions of the Instrument Air System, as noted above, are safety-related.

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The expressed areas of concern are addressed in the following paragraphs.

1. Response to Isolation of Instrument Air

Isolation of instrument air due to a momentary interruption of power on a single RPS bus has been identified as an availability problem and eliminated by recent modifications. Previously, containment isolation logic was powered by the RPS buses. As a result, a loss of power on a single RPS bus would cause isolation of a portion of the containment isolation valves and ultimately a reactor scram. To eliminate this problem, the power source for the containment isolation logic has been removed from the RPS buses and placed on an uninterruptible power source. However, it should be noted that the isolation of instrument air will neither directly cause closure of containment isolation valves nor prevent the plant from completing a safe shutdown.

2. Response to Loss of Instrument Air to Scram Valves

With regard to the scram valves, MP&L agrees that isolation of a single valve in the instrument air line will result in a loss of air to the scram valves and ultimately a reactor scram. It should be noted that the ability to scram is not affected and furthermore, even if a scram was not caused by the loss of air to the scram valves, then the loss of air to other systems in the containment would eventually cause a scram.

3. Response to Operation of ADS SRV's Upon Loss of Instrument Air

The ADS passive air system design was described to the NRC in AECM-82/490 (Reference 2) and is in accordance with FSAR Subsections 5.2.2.4.1 and 7.3.1.1.1.4.2.

The operation of the ADS valves is insured following loss of instrument air by equipping each safety/relief valve utilized for automatic depressurization with two air accumulators and associated inlet check valves. The ADS valve air accumulators are recharged by four air receivers. Two air receivers supply the accumulators associated with the ADS valves on steam lines "A" and "C". Two additional air receivers supply the accumulators for the ADS valves on steam lines "B" and "D". The air receivers, air accumulators, interconnecting piping and associated valves are designed to the requirements of ASME Section III, Class 3 and are seismic Category I.

The ADS passive air system is designed with receivers and accumulators to ensure that the valves can be opened or held open following failure of the air supply to the receivers. The pneumatic supply system is sized to be capable of opening the valves and holding them open against the maximum drywell pressure of 30 psig. The accumulators capacity is sufficient for each ADS valve to provide two actuations against 70 percent of maximum drywell pressure (21 psig).

The receiver's capacity is sufficient to account for system leakage and to allow for three actuations of each ADS valve over a minimum period of 7 days without replenishment. Alternatively, the receiver's capacity is sufficient for 100 actuations, over a six-hour period, of the low-low setpoint safety/relief valve. For longer periods of time (100 days of air supply), the receivers/accumulators can be recharged by utilizing compressed air cylinders and the test connection provided outside the containment on the instrument air supply penetration piping, should the nonsafety-related instrument air system be unavailable. The instrument air supply line from the outside containment isolation valve to the air receiver tanks is designed to the requirements of ASME Section III, Class 2 and 3, as applicable and is seismic Category I.

In order to insure the integrity of the passive air system, MP&L committed to perform an integrated leak test on the ADS air system every 18 months and furthermore, prior to start-up following the first refueling outage, MP&L will install safety grade instrumentation to monitor ADS air receiver pressure. Both commitments were transmitted to the NRC in AECM-82/510 (Reference 3) and were reiterated in AECM-82/581 (Reference 4).

MP&L will be transmitting additional information on the ADS accumulator system as a response to the NRC letter dated August 11, 1983 (Reference 5).

4. Response to Loss of Instrument Air to MSIV's

Upon the loss of instrument air, the MSIV's are designed to fail to the safe (closed) position by spring action and/or instrument air stored in the MSIV's accumulators (one accumulator per MSIV). The pressure from the accumulator and the spring force are each capable of independently closing the valve with the reactor vessel at the design pressure. The loss of instrument air to the MSIV's will close the valves and automatically trigger a reactor scram which will bring the plant to a safe condition.

To reiterate, the isolation of instrument air will not prevent the mitigation of an accident under the present design.

If you have any further questions, please do not hesitate to contact us.

Yours truly,

L. F. Dale
for L. F. Dale
Manager of Nuclear Services

WKH/SHH:sap

cc: (See Next Page)

MISSISSIPPI POWER & LIGHT COMPANY

cc: Mr. J. B. Richard
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Mr. T. B. Conner
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