Consumers Power Company

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April 15, 1976

Director of Nuclear Reactor Regulation
Att: Mr R. A. Purple, Chief
US Nuclear Regulatory Commission
Washington, DC 20555

DOCKET 50-255, LICENSE DPR-20 -
PALISADES PLANT

On March 26, 1976 and April 7, 1976, Consumers Power submitted responses to questions asked verbally by the staff and later formalized by letter dated March 26, 1976.

The purpose of this letter is to supplement the previous responses and to provide additional information in areas that it has been requested as a result of review of the previous responses.

1. Miniflow Valves (CV-3027 and CV-3056)

   Item 1 of the attachment to the April 7, 1976 letter described modifications that are being completed prior to start-up from the current outage to preclude the "undesirable function" failure of the miniflow valves (CV-3027 and CV-3056). The staff has expressed a desire that ultimately actuation circuitry of these valves be further modified such that it meets the position stated in the recently evolved E1CSB 18. Based on further discussions with the staff and even though we believe that further modification will not reduce that already small risk to the public health and safety, we have agreed to further modify the circuitry associated with these valves, but not prior to the start-up from the present outage. The modifications of the circuitry associated with these valves will be performed as expeditiously as possibly consistent with circuit design and review requirements and component delivery schedules. The modifications will be completed as soon as possible after component delivery but in a manner that does not penalize plant availability. At the extreme, the modifications will be completed no later than the end of the next scheduled refueling outage.

2. Procedural changes that will be implemented prior to plant start-up from the present outage associated with safety injection tank isolation Valves MO-3041, MO-3045, MO-3049 and MO-3052 were described in our March 26, 1976 letter. Even so, the staff has continued to express the desire that the valve position indication be modified such that it conforms to the position stated in E1CSB 18. Based on further discussions with the staff and even though we do not believe that providing further valve position

indication will change the already small risk to the public health and safety, we have agreed to provide additional valve position indication in accordance with the intent of the position stated in E1CSB 18, but not prior to plant start-up from the present outage. The installation of the additional position indicators and modifications to existing position indication, if necessary, will be performed as expeditiously as possible, consistent with design and review requirements and component delivery schedules. The modifications will be completed as soon as possible after component delivery but in a manner that does not penalize plant availability. At the extreme, the modifications will be completed no later than the end of the next scheduled refueling outage.

3. Information regarding valve environmental qualification criteria (temperature, humidity, pressure) in addition to that provided in our March 26, 1976 response was requested. This information is located in Section 6.1.3.2, Page 6-12 of the FSAR.

4. The results of the failure analysis associated with the automatic transfer of the Instrument AC Bus (Y01) were presented in the attachment to our April 7, 1976 letter. This failure analysis showed that four single failures were necessary to cause a loss of redundant power supplies. Even so, the staff has requested that procedural modifications (opening breaker in the alternate power supply) be made such that the regulatory position stated in Regulatory Guide 1.6 is complied with. As we have not had an opportunity to review in detail the design considerations associated with present installation and operating mode and because four single failures are required to postulate a loss of redundant power supplies, we are reluctant to operate in the requested manner. We will, however, complete a detailed review of the purpose of the existing installation and, depending on the outcome of the review, either operate in the requested manner or submit additional justification for not altering the present operating practices. This review and either operating procedure changes or submittal of additional information will be completed prior to the next scheduled refueling outage.

5. The results of the failure analysis associated with the intertie between MCC1 and MCC2 via the battery charger were presented in the attachment to our April 7, 1976 letter. This failure analysis showed that seven single failures were necessary to cause a loss of redundant power supplies. Even so, the staff has expressed a desire that the breaker alignment be altered such that no more than one battery charger be powered from one MCC during normal operations. As this is within the design capability of the system as described in the FSAR, changes will be made in operating practices such that no more than one battery charger is powered from one MCC prior to plant start-up. Permanent operating procedure changes will be completed within one month of plant start-up.

6. The staff has requested additional clarification of the meaning of "OK" in the column titled "Breaker Fuse Coordination" in the table associated with Item 3 in the attachment to our April 7, 1976 letter.

In performing the above survey summarized in this table, we identified all submerged electrical equipment except the submerged valves (which was previously done) and then answered the NRC questions for each electrical scheme. These questions were basically:

a. The safety significance of failure (flooding) of the equipment.

b. The effect on Class 1E (safety) electrical power sources serving this equipment as a result of failures (flooding).

The main thrust of this survey specifically was the breaker/fuse coordination for each scheme and the isolation capabilities. We looked at the fuses in each circuit and judged whether it would isolate the circuit before any other action occurred. We also reviewed the coordination of the breakers on safety-related buses affected by this study to ascertain that any feeder breakers would open before the incoming breaker to the bus.

Additional considerations were:

a. Fuse and Breaker Location - Would it become flooded, thus negating its purpose.

b. If the fuse in the flooded circuit was an appreciable size compared to the first breaker the other equipment serviced by the breaker was reviewed.

The designation "OK" signified that the feeder breaker or fuses were installed such that they would open on a fault prior to the incoming bus breaker opening.

Further, even if a single failure was assumed in the feeder breaker or fuses and the incoming bus breaker was to open, the electrical system design and installation is such that this failure would not cause a loss of ECCS capability. This condition would be less severe than the failure to start of a diesel generator.

7. In addition, the staff has requested clarification of the following items contained in the table associated with Item 3 of the attachment to our April 7, 1976 letter:

"P77A P77B"

"Pressurizer HTR X FMER15 480 V Bus 15"

"Pressurizer HTR X FMER16 480 V Bus 16"

"Cont Bldg Analyzer Sample Panel C-102"

"P77A P77B" are the shield cooling pumps (see E-233).

"Pressurizer HTR X FMER15 480 V Bus 15" is a description which meant to convey that power is supplied from a 2400 V bus through a transformer to 480 V Bus 15. The only loads connected to this bus are the pressure heaters. The phrase "Pressurizer HTR X FMER16 480 V Bus 16" conveys the same meaning (see E-4) except for different buses.

The "Cont Bldg Analyzer Sample Panel C-102" consists of power supplies sampling apparatus associated with hydrogen and oxygen analysis for the clean waste receiver tanks, the quench tank and primary system drain tank.

8. On April 14, 1976, the staff verbally requested that Consumers Power Company investigate whether the electrical penetration design was such that it was not likely to fail under conditions similar to those which caused a penetration failure at the San Onofre Plant during the 1960s. In the short time available, we have been able to locate some, but not all, of the procurement documentation. Review of the available procurement documentation shows that the procurement specifications required that the penetration assemblies be built to withstand fault currents and that the vendor, apparently because of the San Onofre problem, conducted prototype tests on each type of power penetration. Thus, we believe that the San Onofre experience was appropriately considered in the Palisades electrical penetration design and, therefore, that there is reasonable assurance that the penetrations will perform their intended design function.

Ralph B. Sewell
Nuclear Licensing Administrator

CC: JGKeppler,
USNRC