double isolation valves close on the return line to Lake Wylie)

emergency low

CNS

Wylie), double isolation valves close on the discharge header crossover, and single isolation valves open on each channel return to the SNSWP. This sequence, along with isolation of the non-essential header and supply header crossover valves ensures two independent redundant supplies and returns, satisfying the single failure criteria. The non-essential header will only isolate on P-signal, not ~~low-low~~ pumphouse pit level due to a possible s-signal resulting from the containment vent units not in operation. If damage is visually assessed, the non-essential header will be manually isolated.

RN piping in each Diesel Generator Building also has discharge isolation valves that are aligned from lake discharge to SNSWP discharge on the same signals which cause the Auxiliary Building headers to align to the SNSWP.

The discharge lines to the SNSWP split and discharge flow to each "finger" of the SNSWP to assure that surface cooling will occur in all areas of the pond. An orifice is installed to create a pressure drop in the shorter of the two discharge lines to assure equal flow at both discharge points (during a simultaneous safe shutdown of both units).

9.2.1.3 Safety Evaluation

The Nuclear Service Water System is designed to withstand a safe shutdown earthquake and to prevent any single failure from limiting the ability of the engineered safety features to perform their safety functions. Sufficient pump capacity is included to provide the cooling water to shutdown each unit, and the valves are arranged in such a way that loss of one train does not jeopardize the entire system. Sufficient pump capacity is included to provide design cooling water flow under all conditions, and the headers are arranged in such a way that loss of a header does not jeopardize unit safety. Radiation monitors are located in the systems for detection of potentially radioactive leaks. The system is designed to operate at either maximum drawdown of the lake or Standby Nuclear Service Water Pond and also at a maximum water elevation in each body. As described in Section 9.2.1.2.2, the Nuclear Service Water System is designed to withstand both probable maximum flood and the effects of a prolonged drought. Sufficient margin is provided in the equipment design to accommodate anticipated corrosion and fouling without degradation of system performance.

and loss of Lake Wylie.

The RN System is designed to supply the cooling water requirements of a simultaneous LOCA on one unit and cooldown on the other unit assuming a single failure anywhere on the system, ~~and~~ loss of offsite power. Upon complete channel separation, both units are assured of having a source of water, at least one pump capable of supplying required flow on its associated channel, and at least one essential header to provide cooling water to components served by RN. Channels A and B are connected together only at six places: five between the RN supply headers and one between the RN discharge headers. Redundant motor operated isolation valves are provided on the normally open crossover lines, and manual isolation valves are used on normally closed, rarely used crossover lines.

Three crossover between supply headers are in the RN Pumphouse. The RN pump lube injection strainer inlet crossover line is normally open to keep the

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