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July 11, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

Dear Mr. Denton:

Section 8.4.7 of the Catawba Safety Evaluation Report discusses Confirmatory Item 36, Flooding of Electrical Equipment as a Result of a LOCA. In response to this item, please find attached a revised response to FSAR question 440.48.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

ROS/php

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

NRC Resident Inspector
Catawba Nuclear Station

Mr. Robert Guild, Esq.
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cc: Mr. Jesse L. Riley
Carolina Environmental Study Group
854 Henley Place
Charlotte, North Carolina 28207

Mr. Henry A. Presler, Chairman
Charlotte-Mecklenburg Environmental Coalition
943 Henley Place
Charlotte, North Carolina 28207

440.48

Response:

The maximum post-accident flood level inside containment has been determined to be elevation 570'0". The only safety related control room instrumentation below this elevation are the reactor coolant loop elbow flow rate instruments. This instrumentation provides both control room indication and a reactor trip (on low flow in any one loop) neither of which is required after an accident (no operator actions taken on indication, and reactor trips due to safety injection signal).

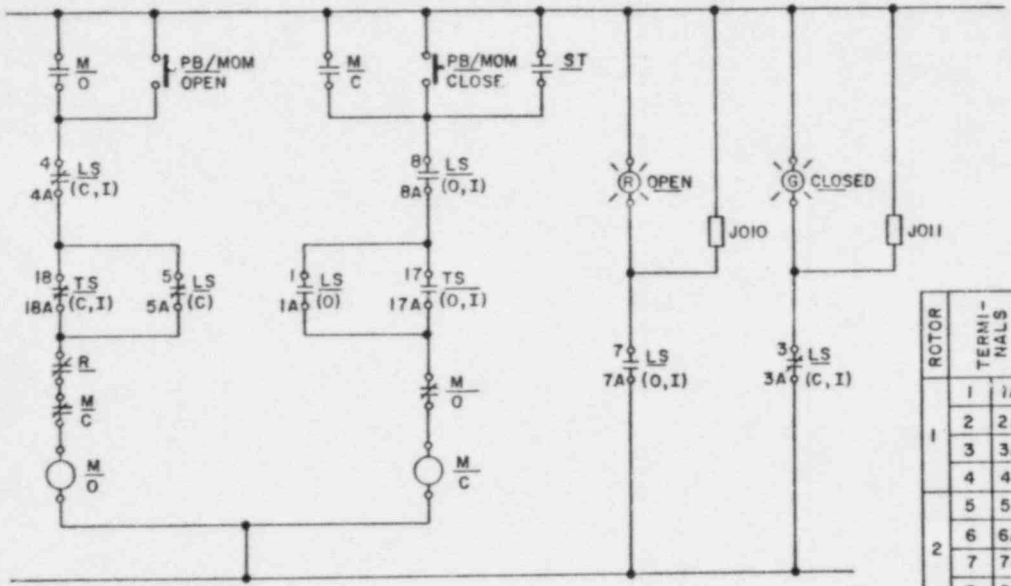
A list of safety related solenoid valves in containment that are below maximum flood elevation is presented in Table Q440.48-1. These solenoids perform one of two functions; namely, controlling air to air diaphragm operated valves and providing air to the lower personnel air lock inflatable seals. All of the air diaphragm operated valves are designed to assume their safety position on loss of air. All of the solenoids controlling the air supply are designed to vent the air diaphragm on loss of power. Therefore, even if control of these solenoid valves is lost the air operated valve will assume its correct position. The solenoids which supply air to the lower personnel air lock seals are designed to fail in the position which supplies air to the seals. None of these valves are required to be repositioned to perform short or long term ECCS functions.

A list of active valves in containment that are below maximum flood elevation is presented in Table Q440.48-2. In this evaluation it was discovered that two valves were required to be raised above flood elevation (the two valves -- 1NW46A and 1NW110B provided sealing water for several containment isolation valves). The valves which will potentially be flooded are, except as noted, electric motor operated. These are assumed to fail in the position they are in when flooded. There is sufficient time for the ones which receive a safety signal to stroke to their safety positions before being flooded. None of these valves are required to be repositioned to perform short or long term ECCS functions.

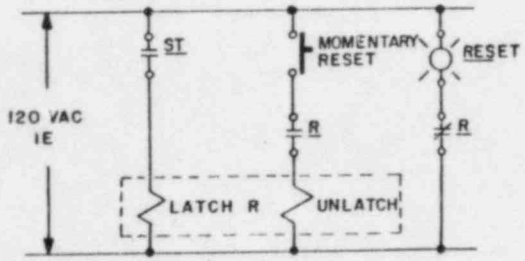
In addition, 18 valve operators were not previously qualified for submergence (1KC429B, 1NC54A, 1NI95A, 1NI266A, 1NI267A, 1NM6A, 1NM72B, 1NM75B, 1NM78B, 1NM81B, 1NM187A, 1NM190A, 1NM197B, 1NM200B, 1NM207A, 1NM210A, 1NM217B, and 1NM220B).

These valves close on Containment Isolation Phase A (ST) signals. There is sufficient time for them to close before being flooded. To prevent possible repositioning after flooding, the valves motor controls circuits are being modified (see Fig. Q440.48-1). One relay per train will be energized by a ST signal and mechanically latched in. Normally closed contacts from this relay will be wired between the limit switches and the open motor starter coils of valves of the corresponding train. These contacts will open on ST and prevent any spurious limit switch operation from repositioning the valves. These relays will have manual reset capability in the control room.

Breakers and fuses are coordinated such that, in the case of faults caused by submergence, the faulted valve circuits will be isolated without adversely affecting the upstream class 1E power sources. These modifications will be completed prior to fuel loading.



TYPICAL ONE PER TRAIN



ROTOR	TERMINALS		OPEN	INTERIM	CLOSE	FUNCTION
1	1	1A	X			M/C
	2	2A	X			
	3	3A		X	X	GREEN
	4	4A		X	X	M/O
2	5	5A			X	M/O
	6	6A			X	
	7	7A	X	X		RED
	8	8A	X	X		M/C
3	9	9A	X			
	10	10A	X			
	11	11A		X	X	
	12	12A		X	X	
4	13	13A			X	
	14	14A			X	
	15	15A	X	X		
	16	16A	X	X		
	17	17A	X	X		CLOSE TS - M/C
	18	18A		X	X	OPEN TS - M/O

X - DENOTES CONTACT CLOSED

TYPICAL CONTROL CIRCUIT FOR LIMITORQUE VALVES LOCATED IN CONTAINMENT BELOW FLOOD LEVEL

CATAWBA NUCLEAR STATION

Figure Q440.48-1
Rev. 8