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EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards revised responses to Items 2,10,11 & 12 of Generic Ltr 83-28 re shunt trip mod.New control room indication/ annunciation unnecessary.

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CP&L
Carolina Power & Light Company

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Mr. Darrell G. Eisenhut, Director
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
ADDITIONAL INFORMATION CONCERNING GENERIC LETTER 83-28 - CLARIFICATION

Dear Mr. Eisenhut:

Our letter dated December 27, 1984 provided plant-specific information regarding the shunt trip modification implemented at H. B. Robinson Steam Electric Plant Unit No. 2 (HBR2). Enclosed we are submitting revised responses to Items 2, 10, 11, and 12. The revised responses provide additional information for clarification to facilitate NRC review; no substantive changes are involved.

Questions regarding this matter should be referred to Mr. Stephen Floyd at (919) 836-6901.

Yours very truly,

S. R. Zimmerman
Manager
Nuclear Licensing Section

JSK/mf (1039JSK)
Enclosure

cc: Mr. J. P. O'Reilly (NRC-RII)
Mr. G. Requa (NRC)
Mr. H. Krug (NRC Resident Inspector - RNP)

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Item 2

"Identify the power sources for the shunt trip coils. Verify that they are Class 1E and that all components providing power to the shunt trip circuitry are Class 1E and that any faults within non-Class 1E circuitry will not degrade the shunt trip function. Describe the annunciation/indication provided in the control room upon loss of power to the shunt trip circuits. Also describe the overvoltage protection and/or alarms provided to prevent or alert the operator(s) to an overvoltage condition that could affect both the UV coil and the parallel shunt trip actuation relay."

CP&L Response

The power sources for the H. B. Robinson Unit No. 2 Train "A" and Train "B" reactor trip breaker shunt trip coil are from safety-related 125V DC System Panels and its corresponding safety-related batteries. The power sources to both the Train "A" and "B" reactor trip breaker shunt trip coils are Class 1E.

The existing components in the shunt trip circuits are either Class 1E or will not affect the operation of the shunt trip mechanism should they fail. The shunt trip coils are currently being upgraded to Class 1E through the Westinghouse qualification program.

It is not necessary to add new control room indication/annunciation as a result of incorporating the shunt trip modification. Existing indications on the main control board for breaker operation are the red and green position lights.

These lights are powered from the same fused 125V DC System supply used for closing the shunt which trips the circuit breakers. A green light indicates that the breaker is open and power is available for closing and tripping the breaker. The red light is connected in series with the shunt trip coil and an "a" auxiliary contact; the red light also indicates that power is available to the shunt trip device and that there is circuit continuity in the shunt trip coil. This provides an indication that the shunt trip coil is ready to perform its function when required.

The added shunt trip circuitry is powered from the reactor protection logic voltage supply. Components in the added shunt trip circuitry have been selected based on their ability to perform their intended function up to a voltage as high as approximately 115% of nominal voltage.

The shunt trip coils and associated circuitry in the reactor trip breakers are powered from 125V DC System via the station batteries. Since the 125V DC System voltage is supplied from the batteries, it may temporarily rise to the battery equalizing voltage (not to exceed 115% of nominal voltage). The overvoltage relay is set at approximately 115% of the nominal voltage to shut the charger down if the voltage on the battery significantly exceeds the level used for equalizing.

Should the overvoltage relay (internal to the battery charger) fail, the voltage may exceed the 115% level. If the undervoltage trip coil fails due to high voltage, it will fail in the safe position (as the coil will open, thus tripping the breaker). The shunt trip coil does not normally see the full

125V DC System voltage because it is in series with the red indicating light until called upon to trip. If the shunt trip is energized during an overvoltage condition, the coil should still cause the breaker to open, since it is energized to operate. Should the parallel shunt trip actuation relay fail because of excessive voltage, it will fail to the deenergized state, which will again cause the shunt trip coil to trip the breaker.

Item 10

"Verify that each bypass breaker will be tested to demonstrate its operability prior to placing it into service for reactor trip breaker testing."

CP&L Response

HBR2's current surveillance test verifies each bypass breaker is operable prior to placing it into service for reactor trip breaker testing. In addition, when corrective maintenance is performed on the reactor trip breakers, the bypass breakers are tested prior to taking the reactor trip breakers out of service.

Item 11

"Verify that the test procedure used to determine reactor trip breaker operability will also demonstrate proper operation of the associated control room indication/annunciation.

CP&L Response

The breaker red (closed) and green (open) lights on the RTGB provide indication that the shunt trip circuit is ready to perform its function when required. Status lights in the RTGB will indicate the proper position of the breaker during the testing of the automatic shunt trip and undervoltage trip.

Item 12

"Verify that the response time of the automatic shunt trip feature will be tested periodically and shown to be less than or equal to that assumed in the FSAR analyses or that specified in the technical specifications.

CP&L Response

HBR2 currently measures the opening times of both reactor trip and bypass breakers as part of the preventive maintenance program at refueling intervals. The response time of the breakers tripped by the UVTAs is measured to verify that the response time is not greater than 167 milliseconds, per the Westinghouse Specification. The response time of the breakers tripped by the STA's is not periodically being tested as part of the maintenance program. Upon final completion of the WOG life cycle testing of the STAs and UVTAs, CP&L will evaluate the results and determine, as appropriate, necessary revisions to the maintenance program. In the interim, CP&L has incorporated the replacement of the UVTAs at five-year intervals.

(1039JSK/mf)