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FACIL: 50-261 H. B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
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RECIP. NAME RECIPIENT AFFILIATION
GRACE, J. N. Region 2, Office of Director

SUBJECT: Documents commitments made during 870415 meeting w/NRC in Atlanta, GA re safety sys functional insp. Planned actions in areas of electrical sys, station batteries, diesel generators & dedicated shutdown will be completed prior to restart.

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J. N. Grace
Regional Administrator
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Region II
101 Marietta Street, Suite 3100
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
SAFETY SYSTEM FUNCTIONAL INSPECTION
SPECIAL REPORT - CAROLINA POWER & LIGHT COMPANY FOLLOWUP

Dear Dr. Grace:

The purpose of this letter is to document commitments made in a meeting held in NRC Region II offices in Atlanta on April 15, 1987. The meeting concluded the exit for the Safety System Functional Inspection (SSFI) completed at the H. B. Robinson Plant on March 27, 1987.

At that meeting, CP&L shared with your staff a presentation of initiatives taken to address major concerns and issues raised during the inspection. A copy of the handout offered at the meeting is enclosed. As a result of these initiatives, CP&L has planned to complete certain actions prior to returning to power operation from the current refueling outage. These actions were discussed with your staff and are listed below under four major categories:

A. Electrical Systems

1. DB-50 Interrupt Capability - CP&L will revise the Probabilistic Risk Assessment (PRA) prepared to demonstrate the acceptability of the DB-50 Breakers on Emergency Busses E1 and E2 to include the concerns raised by the SSFI Team. It is believed that the revised PRA will continue to demonstrate an acceptably low risk associated with continued operation with these breakers. The final PRA will be submitted for NRC review as soon as available, but at least prior to returning to power operation.

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2. Molded Case Breaker Interrupt Capability - CP&L will complete an evaluation of the interrupt capability of the Molded Case Breakers on MCC-5 and MCC-6. It is anticipated that the evaluation will demonstrate that these breakers are capable of safely interrupting short-circuit current. Calculations performed as part of this evaluation will be submitted to the NRC as soon as completed, but at least prior to returning to power operation.
3. DC Electrical System Short Circuit Analysis - CP&L will complete a Short Circuit Analysis of the safety-related DC Electrical System to assess interrupt capability of the DC breakers. The analysis and any resulting corrective actions to ensure DC Electrical System operability will be completed prior to taking the reactor critical. The calculations associated with this analysis will be submitted for NRC review.

B. Station Batteries

1. Sizing - CP&L will verify the adequacy of Station Batteries "A" and "B" using design basis and field verified load information. A revised load profile will be developed based on the verification, and battery testing will be performed using the revised load profile to establish operability of the batteries. Operability testing and verification will be completed prior to reactor criticality.
2. Surveillance Testing - CP&L is currently reviewing the Station Battery Surveillance Program to strengthen the program in the area of performance trending. IEEE Standard 450 is being used as guidance for the review. In addition to the testing identified to support Item B.1 above, a final revision to the overall surveillance program based on this review will be completed by the end of this year.

C. Diesel Generators (D/Gs)

1. Scavenging Air Blowers - CP&L will ensure that the Scavenging Air Blowers on D/Gs "A" and "B" are being operated in accordance with vendor recommendations relative to rotor-to-casing clearances prior to reactor criticality.
2. Governor Operation - CP&L will investigate the load decay noticed on D/G "A" during parallel operations and ensure that this does not affect the capability of the D/G to perform its design basis function during emergency operations (separated from grid). Actions necessary to satisfy this item will be completed prior to reactor criticality.
3. Support Coolers - The five remaining D/G service water support coolers to be replaced will be changed prior to returning to power operation.

4. Vendor Recommendations - Current outstanding recommendations regarding operation of the D/Gs will be reviewed. Recommendations deemed necessary to ensure continued operability of the D/Gs will be implemented prior to power operation. Additionally, a plan will be developed reflecting the disposition of any remaining recommendations.

D. Dedicated Shutdown (DS)

1. Procedures - The DS procedures will be reviewed for technical adequacy and human factors and upgraded, as necessary, prior to returning to power. Additionally, DSP-001, "Hot Shutdown Using the Dedicated/Alternate Shutdown System," will be reviewed for procedure entry conditions. Needed improvements will be included in the above upgrade. Training for operators required to use these procedures will be conducted prior to returning to power operation.
2. Communications - Prior to returning to power operation, CP&L will ensure that operators can conduct required emergency communications to support DS shutdown of the Plant, either through completion of activation (FCC License pending) of the currently installed radio repeater, or through some interim method until the permanent system is available.
3. Emergency Lighting - CP&L will review the existing emergency lighting system relative to Appendix-R requirements, and pending exemption requests, and ensure sufficient lighting is available for DS shutdown of the Plant. The review will be completed and necessary interim improvements, if identified, will be implemented prior to returning to power.

Based on the April 15, 1987 meeting and subsequent conversations with your staff, CP&L understands that satisfactory completion of the above items will resolve the immediate concerns resulting from the SSFI prior to return of Robinson - 2 to power operation. CP&L understands that additional items may require action in the longer term and will address these in response to the SSFI Inspection Report.

If you have any questions regarding the above, contact J. M. Curley or me.

Very truly yours,

Guy P. Beatty, Jr.
Vice President
Robinson Nuclear Project Department

JMC:sdm

Enclosure

cc: Document Control Desk
H. E. P. Krug

CAROLINA POWER AND LIGHT COMPANY

SSFI

FOLLOWUP INITIATIVES

PRESENTED TO

NRC REGION II

ATLANTA, GEORGIA

APRIL 15, 1987

CAROLINA POWER AND LIGHT COMPANY

SSFI

FOLLOWUP INITIATIVES

- ELECTRICAL SYSTEMS
  - DB-50 INTERRUPT CAPABILITY
  - MOLDED CASE BREAKERS - INTERRUPT CAPABILITY
  - DC SYSTEM - SHORT CIRCUIT ANALYSIS

- STATION BATTERIES
  - SIZING
  - SURVEILLANCE

- DIESEL GENERATORS
  - SCAVENGING AIR BLOWER
  - GOVERNOR OPERATION
  - SUPPORT COOLERS
  - VENDOR RECOMMENDATIONS

- DEDICATED SHUTDOWN
  - PROCEDURES
  - COMMUNICATIONS
  - EMERGENCY LIGHTING

CAROLINA POWER AND LIGHT COMPANY

SSFI

FOLLOWUP INITIATIVES

o ELECTRICAL SYSTEMS	
o DB-50 INTERRUPT CAPABILITY	W. J. FLANAGAN
o MOLDED CASE BREAKERS - INTERRUPT CAPABILITY	W. J. FLANAGAN
o DC SYSTEM - SHORT CIRCUIT ANALYSIS	W. J. FLANAGAN
o STATION BATTERIES	
o SIZING	J. M. CURLEY
o SURVEILLANCE	J. M. CURLEY
o DIESEL GENERATORS	
o SCAVENGING AIR BLOWER	J. M. CURLEY
o GOVERNOR OPERATION	J. M. CURLEY
o SUPPORT COOLERS	J. M. CURLEY
o VENDOR RECOMMENDATIONS	J. M. CURLEY
o DEDICATED SHUTDOWN	
o PROCEDURES	J. M. CURLEY
o COMMUNICATIONS	J. M. CURLEY
o EMERGENCY LIGHTING	J. M. CURLEY

ELECTRICAL SYSTEMS - DB-50 INTERRUPT CAPABILITY

OBJECTIVE: PRIOR TO RETURN TO POWER, ESTABLISH THE ADEQUACY OF THE EMERGENCY POWER SYSTEM TO BRING THE PLANT TO A SAFE SHUTDOWN FOLLOWING A DESIGN BASIS EVENT

PLAN: REVISE THE PRA ASSOCIATED WITH FAULTED OPERATION OF DB-50 BREAKER TO ADDRESS CONCERNS RAISED BY SSFI TEAM.

ELECTRICAL SYSTEMS - MOLDED CASE BREAKER INTERRUPT CAPABILITY

OBJECTIVE: PRIOR TO RETURN TO POWER, ESTABLISH THE ADEQUACY OF THE EMERGENCY POWER SYSTEM MOLDED CASE BREAKERS TO SUPPORT SAFE SHUTDOWN FOLLOWING A DESIGN BASIS EVENT

PLAN: DEMONSTRATE THROUGH CALCULATIONS THE ABILITY OF THE MOLDED CASE BREAKERS ON MCC-5 AND 6 TO SAFELY INTERRUPT SHORT CIRCUIT CURRENT.

ELECTRICAL SYSTEMS - DC SHORT CIRCUIT ANALYSIS

OBJECTIVE: PRIOR TO RETURN TO POWER, ESTABLISH THE ADEQUACY OF THE SAFETY RELATED DC ELECTRICAL SYSTEM TO BRING THE PLANT TO A SAFE SHUTDOWN FOLLOWING A DESIGN BASIS EVENT

PLAN:

- REVIEW DESIGN DOCUMENTATION
- FIELD VERIFY DESIGN
- GENERATE "AS-BUILT" SHORT CIRCUIT CALCULATIONS

STATION BATTERIES - SIZING

OBJECTIVE: PRIOR TO RETURN TO POWER, ESTABLISH THE ADEQUACY OF THE SAFETY RELATED BATTERIES TO BRING THE PLANT TO A SAFE SHUTDOWN FOLLOWING A DESIGN BASIS EVENT

PLAN:

- o REVIEW DESIGN DOCUMENTATION
- o FIELD VERIFY DESIGN
- o ESTABLISH "AS-BUILT" LOAD PROFILE
- o GENERATE "AS-BUILT" SIZING CALCULATIONS
- o DEMONSTRATE ADEQUACY OF BATTERIES

STATION BATTERIES - SURVEILLANCE

OBJECTIVE: STRENGTHEN BATTERY TESTING PROGRAM TO PROVIDE BATTERY PERFORMANCE TRENDING IN ADDITION TO THAT REQUIRED BY PLANT TECHNICAL SPECIFICATIONS. IEEE STANDARD 450 WILL BE USED FOR GUIDANCE IN THIS UPGRADE.

STATUS:

- o IDENTIFIED NEED TO DO SERVICE TEST THIS OUTAGE.
- o FUTURE TESTING, TO PROVIDE CONTINUED ASSURANCE OF BATTERY OPERABILITY, STILL BEING EVALUATED.

DIESEL GENERATORS - SCAVENGING AIR BLOWER

OBJECTIVE: TO ENSURE THAT THE SCAVENGING AIR BLOWER (SAB) ON EACH D/G IS OPERATED IN ACCORDANCE WITH VENDOR RECOMMENDATIONS PRIOR TO RETURN TO POWER

STATUS:

- o "B" SAB REPLACED WITH MODIFIED UNIT
- o "A" SAB ROTOR TO CASING CLEARANCE VERIFIED TO MEET VENDOR RECOMMENDATIONS
- o DAMAGED SAB (FROM "B" D/G) RETURNED FOR FAILURE ANALYSIS AND MODIFICATION
- o MODIFIED SAB TO BE SHIPPED 5-31-87 (CURRENT SCHEDULE)

DIESEL GENERATORS - GOVERNOR OPERATION

OBJECTIVE: ENSURE LOAD DROP-OFF OBSERVED WHEN RUNNING D/G PARALLELED TO GRID DOES NOT OCCUR WHEN D/G IS OPERATED AND SEPARATED FROM GRID. COMPLETE PRIOR TO RETURN TO POWER.

STATUS:

- o 15 MINUTE RUN (4-3-87) AT 400 KW SUCCESSFUL
- o 15 MINUTE RUN (4-12-87) AT 1000 KW SUCCESSFUL
- o ADDITIONAL TESTING TO BE DONE AT FACTORY

DIESEL GENERATORS - SUPPORT COOLERS

OBJECTIVE: REPLACE (3) SW SUPPORT COOLERS FOR EACH D/G DURING OUTAGE.

STATUS:

- o "B" LO COOLER REPLACED
- o 5 REMAINING COOLERS - DELIVERY WEEK OF 4-13-87
- o FAILURE ANALYSIS ON FAILED COOLER IN PROGRESS

DIESEL GENERATORS - VENDOR RECOMMENDATIONS

OBJECTIVE: TO REVIEW ALL CURRENT VENDOR RECOMMENDATIONS REGARDING OPERATION OF D/G's. IMPLEMENT APPLICABLE RECOMMENDATIONS PRIOR TO RETURN TO POWER. REVIEW CURRENT VENDOR RECOMMENDATION PROGRAM AND REVISE AS NEEDED.

STATUS:

- o 5 MINUTE NO/LOW LOAD RUN TIME LIMIT CURRENTLY IMPOSED ON "A" D/G
- o STEP LOAD REDUCTION RECOMMENDATION IMPLEMENTED

DEDICATED SHUTDOWN - PROCEDURES

OBJECTIVE: CONDUCT A REVIEW OF DS PROCEDURES "HOT SHUTDOWN USING THE DEDICATED/ ALTERNATE SHUTDOWN SYSTEM" AND "COLD SHUTDOWN USING THE DEDICATED/ ALTERNATE SHUTDOWN SYSTEM" FOR TECHNICAL CONTENT, HUMAN FACTORS AND PROCEDURE ENTRY REQUIREMENTS. UPGRADE PROCEDURES AND CONDUCT TRAINING FOR THOSE OPERATORS REQUIRED TO USE THE PROCEDURES PRIOR TO RETURN TO POWER

STATUS:

- REVIEW IN PROGRESS

DEDICATED SHUTDOWN - COMMUNICATIONS

OBJECTIVE: ENSURE OPERATORS CAN CONDUCT REQUIRED COMMUNICATIONS TO SUPPORT DEDICATED (REMOTE) SHUTDOWN OF PLANT. COMPLETE PRIOR TO RETURN TO POWER

STATUS:

- o REPEATER TO ENHANCE OPERATION OF HAND HELD RADIOS (DS POWER SUPPLIED)
- o FCC LICENSE PENDING - JUNE 1987
- o CONTINGENCY PLAN FOR RETURN TO POWER USING EXISTING RADIO SYSTEM

DEDICATED SHUTDOWN - EMERGENCY LIGHTING

OBJECTIVE: PRIOR TO RETURN TO POWER, ENSURE SUFFICIENT LIGHTING IS AVAILABLE TO SUPPORT DEDICATED (REDUCED) SHUTDOWN OF PLANT

PLAN:

- o REVIEW EXISTING LIGHTING/COMMITMENTS
- o REVIEW TEST TO SATISFY APPENDIX R
- o DEVELOP LONG TERM/SHORT TERM CORRECTIVE ACTIONS AS NEEDED

SSFI INITIATIVES CURRENT SCHEDULE SUMMARY

PRIOR TO RETURN TO POWER

- o REVISE PRA FOR DB-50 BREAKER FAULTED OPERATION
- o ADDRESS MOLDED CASE BREAKER ISSUE
- o VERIFY DC SYSTEM SHORT CIRCUIT CAPABILITY
- o DETERMINE STATION BATTERY AS-BUILT LOAD PROFILE
- o CONDUCT STATION BATTERY SERVICE TEST TO VERIFY BATTERY CAPABILITY WITH NEW PROFILE
- o ENSURE D/G SCAVENGING AIR BLOWER OPERATION MEETS VENDOR RECOMMENDATION
- o VERIFY "A" D/G GOVERNOR OPERABILITY
- o REPLACE ALL D/G SW COOLERS
- o COMPLETE REVIEW OF D/G VENDOR RECOMMENDATIONS - DEVELOP PLAN FOR IMPLEMENTING ADDITIONAL RECOMMENDATIONS AS NEEDED
- o UPGRADE DS PROCEDURES (2) - CONDUCT TRAINING
- o PROVIDE FOR COMMUNICATION TO SUPPORT DS SHUTDOWN
- o AUGMENT EMERGENCY LIGHTING TO SUPPORT DS SHUTDOWN AS NEEDED

SSFI INITIATIVES CURRENT SCHEDULE SUMMARY

FUTURE (PROJECTED COMPLETION TARGET)

o DS COMMUNICATIONS FINAL UPGRADE	- JUNE 1987
o BATTERY SURVEILLANCE PROGRAM	- DECEMBER 1987
o REVISE VENDOR RECOMMENDATION PROGRAM AS NEEDED	- DECEMBER 1987
o REVIEW/UPGRADE REMAINING DS PROCEDURES	- DECEMBER 1987
o LONGTERM EMERGENCY LIGHTING IMPROVEMENTS (IF NEEDED)	- MID 1988
o REVIEW CORRECTIVE ACTION PROGRAM	- DECEMBER 1987