Official Copy

November 28, 1988

Docket No. 50-261
License No. DPR-23

Carolina Power and Light Company
ATTN: Mr. E. E. Utley
Senior Executive Vice President
Power Supply and Engineering
and Construction
P. O. Box 1551
Raleigh, NC 27602

Gentlemen:

SUBJECT: MEETING SUMMARY - H. B. ROBINSON NUCLEAR PLANT - DOCKET NO. 50-261

This refers to the meeting conducted at your request in the Region II office on November 16, 1988. The meeting involved a discussion of several work activities to be performed during the present refueling outage at your H. B. Robinson facility.

It is our opinion that this meeting was beneficial, and provided a better understanding of your activities related to the Robinson service water system, electrical distribution system, and dry fuel storage.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Should you have any questions concerning this matter, we will be pleased to discuss them.

Sincerely,

Original Signed by
Charles W. Hehl /for

Luis A. Reyes, Director
Division of Reactor Projects

Enclosures:
1. List of Attendees
2. Meeting Summary
3. Presentation Handout

cc w/encls: (See page 2)

IE 43

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IE45

cc w/encls:
C. R. Dietz, Manager
Robinson Nuclear Project Department
R. E. Morgan, Plant General Manager
State of South Carolina

bcc w/encls:
NRC Resident Inspector
DRS Technical Assistant
Document Control Desk

RII	RII	RII	RII
RCarroll:ser	PFredrickson	DVerrelli	AGibson
11/25/88	11/25/88	11/25/88	11/28/88

November 28, 1988

ENCLOSURE 1

LIST OF ATTENDEES

Carolina Power and Light

C. R. Dietz, Manager, Robinson Nuclear Project Department (RNPD)
J. M. Curley, Director, Regulatory Compliance
W. J. Flanagan, Manager, Modification Projects
R. W. Prunty, Jr., Principal Engineer, Nuclear Licensing
S. W. Farmer, Senior Engineer, RNPD
M. D. Macon, Project Engineer, Nuclear Engineering Department (NED)
K. A. Williamson, Project Engineer, NED

Nuclear Regulatory Commission, RII

A. F. Gibson, Director, Division of Reactor Safety (DRS)
E. G. Adensam, Acting Chief, Reactor Projects Branch 1, Division of Reactor Projects (DRP)
A. R. Herdt, Chief, Engineering Branch, DRS
P. E. Fredrickson, Chief, Project Section 1A, DRP
T. E. Conlon, Chief, Plant Systems Section (PSS), DRS
F. Jape, Chief, Test Programs Section (TPS), DRS
R. E. Carroll, Jr., Project Engineer, Project Section 1A, DRP
P. J. Fillion, Reactor Inspector, PSS, DRS
A. Szczepaniec, Reactor Inspector, TPS, DRS
M. T. Lauer, Reactor Inspector, Facilities Radiation Protection Section, DRS

Nuclear Regulatory Commission Headquarters

R. Lo, Project Manager, Directorate II-1, NRR

November 28, 1988

ENCLOSURE 2

MANAGEMENT MEETING SUMMARY

Carolina Power and Light (CP&L) opened their presentation by stating that they had requested this meeting to discuss the ongoing and future activities at H. B. Robinson that are associated with: (1) the recently constructed dry fuel storage facility; (2) the on-site electrical distribution system; and (3) the plant's service water (SW) system. Beginning with a discussion of the dry fuel storage facility, CP&L stated that without it, their full core offload capability would be lost in 1989. A review of the overall process and of schedule milestones was presented. The licensee indicated that the first canister of spent fuel assemblies is scheduled to be loaded December 9-21, 1988, with the remaining seven canisters to be loaded sometime in March or April 1989. Since the Technical Specifications currently only address three dry fuel storage modules, a change will have to be submitted/approved to recognize all eight modules prior to loading the corresponding canisters. As the final readiness and procedural review/approval is rapidly approaching, NRC suggested that CP&L reconfirm that contingency plans exist in case of any mishaps during canister handling/transport to the dry fuel storage facility. The licensee indicated that they would, and that process improvements, with respect to ALARA considerations, were also under review.

CP&L then focused the presentation towards the recent design-related problems encountered on the electrical distribution system. These problems were related to the DB 50 interrupt current, motor control center breaker interrupt current, station battery sizing, "B" safety injection pump, and motor control center cable sizing. The licensee discussed the AC power system calculation development process in which these problems are being handled under the design basis reconstitution program. Major items/considerations included in the AC power system calculation development are capacity, short circuit, voltage emergency diesel generator (EDG) capacity, EDG dynamic analysis, and instrument system analysis. Resulting modifications and load reductions were discussed, including schedules for completion. In answer to NRC's concern over the possibility of future plant shutdowns due to further problems identified in the ongoing design review process, the licensee stated that reviews were far enough along such that no adverse impact was anticipated subsequent to the refueling outage presently taking place.

The last topic of discussion was the recent service water system problems involving accelerated microbiological corrosion and fouling of the HVH containment fan coolers. CP&L indicated that during the present refueling outage SW piping inside containment will be replaced; a system flow balance will be performed; eddy current testing of the HVH coolers will be conducted; and required SW sleeve maintenance in the reactor auxiliary building will be accomplished. The licensee is also looking at the HVH-4 cooler pressure/temperature data taken subsequent to its recent biological fouling, and plans to continue pressure/temperature monitoring once the Unit restarts. Future plans, as described by the licensee, include replacement of the reactor auxiliary building SW piping (next refueling outage); installation of a

chlorination system to combat biological fouling of the HVH coolers (first quarter 1989); development of component layup procedures (1989); continued performance monitoring and generic letter followup; and installation of a side stream monitor in the SW system (first quarter 1989). The NRC informed CP&L that the upcoming generic letter will address the need for additional temperature monitoring points to assure proper heat transfer across the HVH coolers. Additionally, it was conveyed to the licensee that the planned installation of a side stream monitor could prove to be most beneficial in assessing HVH cooler conditions during plant operation.

The Division Director of Reactor Safety closed the meeting by thanking CP&L for their time, and indicated that the areas discussed would be further reviewed during future NRC inspection efforts.

ENCLOSURE 3

ROBINSON

DRY FUEL STORAGE
ELECTRICAL DISTRIBUTION SYSTEM
SERVICE WATER SYSTEM

ROBINSON

DRY FUEL STORAGE

* LICENSE SNM-2502 DOCKET NO. 72-3
* DEMONSTRATION PROJECT - THREE MODULES
* EXPANSION - FIVE MODULES
* FULL CORE OFFLOAD CAPABILITY LOST IN 1989
* SCHEDULED TO LOAD FUEL 12/9 - 12/21

H B ROBINSON PROJECT
DRY SPENT FUEL STORAGE
REVIEW FOR
NUCLEAR REGULATORY COMMISSION

1. REVIEW OF NUHOMS PROCESS AND SYSTEM DESCRIPTION

2. REVIEW OF SCHEDULE MILESTONES

3. REVIEW OF OPERATIONAL READINESS

4. DISCUSSION OF TECH SPEC ISSUES

H B ROBINSON PROJECT
DRY SPENT FUEL STORAGE
SCHEDULE REVIEW
FOR
NUCLEAR REGULATORY COMMISSION

1.	CANISTER MODIFICATION	11/10-11/18
2.	PROCEDURE APPROVAL	10/10-11/26
3.	DRY RUN	11/26-12/1
4.	OPERATIONAL READINESS REVIEW	12/2-12/8
5.	LOAD ONE CANISTER	12/9-12/21
6.	LOAD SEVEN CANISTERS	3/89-4/89

H B ROBINSON PROJECT
DRY SPENT FUEL STORAGE
REVIEW FOR
NUCLEAR REGULATORY COMMISSION

TECH SPEC ISSUES
FOR FUTURE RESOLUTION

1. TECH SPEC CURRENTLY CONSIDERS 3 MODULES
WILL BE CHANGED TO CONSIDER 8

2. TECH SPEC REFERS TO AN ANNUAL RADIOLOGICAL REPORT
WILL BE CHANGED TO SEMI ANNUAL RADIOLOGICAL EFFLUENT
RELEASE REPORT WHICH IS CURRENTLY IN THE E&RC REPORT
PROGRAM

H B ROBINSON PROJECT
DRY SPENT FUEL STORAGE
REVIEW FOR
NUCLEAR REGULATORY COMMISSION

OPERATIONAL READINESS

1. TECHNICAL SPECIFICATION COMPLIANCE ITEM BY ITEM

2. PLANT MANAGEMENT RESPONSIBILITY

3. 6 OF 55 ITEMS HAVE BEEN APPROVED

4. PLANT NUCLEAR SAFETY COMMITTEE APPROVES COMPLETED OPERATIONAL READINESS PACKAGE

ROBINSON

ELECTRICAL DISTRIBUTION SYSTEM

* RECENT PROBLEMS
* DESIGN BASIS DOCUMENT RECONSTITUTION
* EARLY FINDINGS
* PROJECT PLANS

ROBINSON

RECENT PROBLEMS

* DB 50 INTERRUPT CURRENT
* MOTOR CONTROL CENTER BREAKER INTERRUPT CURRENT
* STATION BATTERY SIZING
* "B" SAFETY INJECTION PUMP
* MOTOR CONTROL CENTER CABLE SIZING

ROBINSON

DESIGN BASIS DOCUMENT RECONSTITUTION

* FUNCTIONAL DESIGN
* CODES AND STANDARDS
* REGULATORY COMMITMENTS
* CALCULATIONS

ROBINSON

EARLY FINDINGS

* EMERGING COMMERCIAL DESIGN
* EMERGING CODES AND STANDARDS
* EMERGING COMPUTER TECHNOLOGY

ROBINSON

EMERGING COMMERCIAL DESIGN

* FOCUS ON MECHANICAL SYSTEMS
* ELECTRICAL NOT UNIQUE TO NUCLEAR
    - -SINGLE EMERGENCY DIESEL
    - -SINGLE STATION BATTERY
    - -USE OF ABT'S
* 480 VAC EMERGENCY BUSES

ROBINSON

EMERGING CODES AND STANDARDS

* 10CFR50 APPENDIX B
  - PROPOSED ADMENDMENT 4/17/69
  - ISSUED 6/27/70
* ANSI N45.2.11
  - COMMITTEE FORMED 11/71
  - APPROVED 6/6/74
* ANSI/ANS-3.2
  - COMMITTEE FORMED 1969
  - ISSUED 1971
* AIEE 952-ELECTRIC POWER DISTRIBUTION FOR INDUSTRIAL PLANTS
  - SECOND EDITION 1964
  - PREDICESSOR OF IEEE 141
* IEEE 141

  ISSUED 1969

ROBINSON

EMERGING COMPUTER TECHNOLOGY

* ELECTRICAL CALCULATIONS DONE BY HAND
* ASSUMPTIONS WERE BROAD
* USE OF MARGIN WAS FREQUENT
* SCENARIOS WERE LIMITED

CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON UNIT-2

- EPDS DBD OVERVIEW
- SCHEDULE
- SCHEDULE CONSIDERATIONS
- SUMMARY

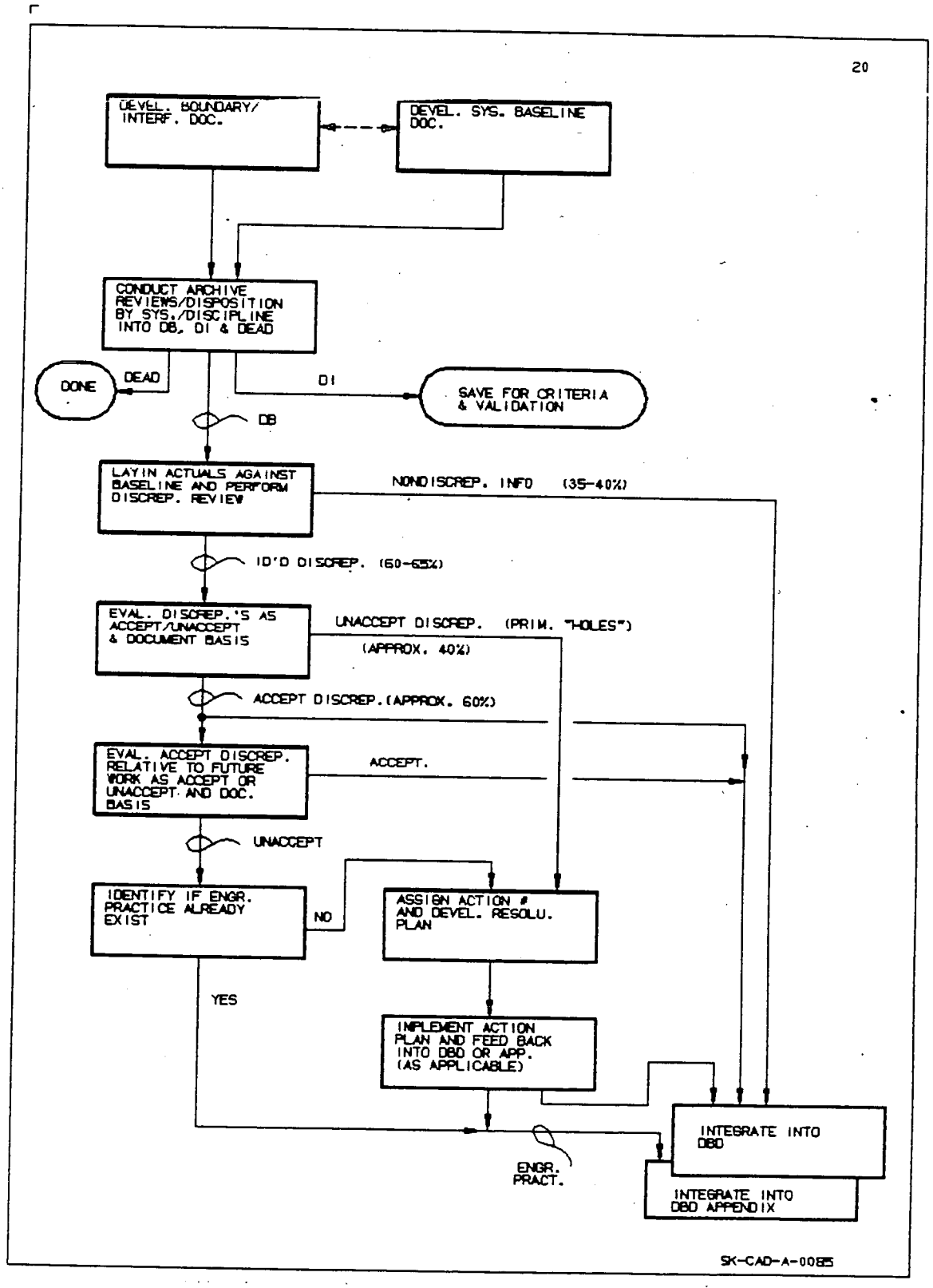
- o EPDS DBD OVERVIEW

  - Process

    - o Phases/Definitions

    - o Process Flow Chart

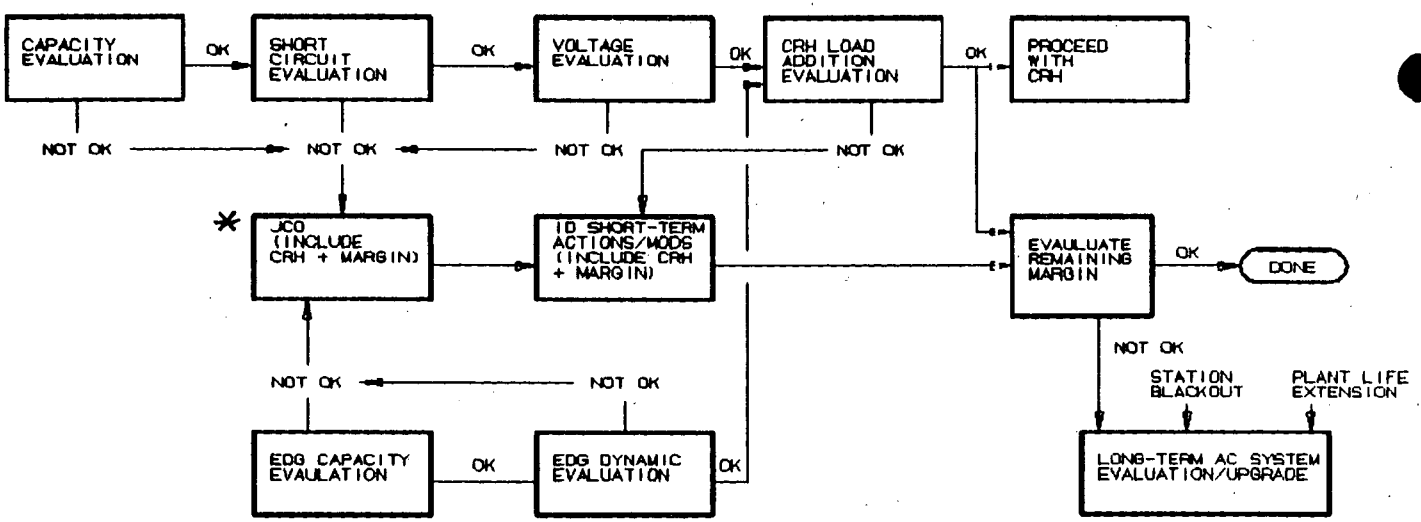
- Process
  - Major Elements/Phase
    - Boundary/Interface Document
    - System Baseline Development
    - Archive Reviews for Actuals
    - Discrepancy Identification/Evaluation
    - Action Item Identification/Evaluation
    - Feedback
      - Action Resolutions
      - Validation
  - Definitions
    - Boundary/Interface Document
      - Defines the system scope (its width/breath)
      - Defines the conceptual transition/interfaces points with other supported/supporting systems
    - System Baseline
      - Compilation of current day standards/requirements
        - IEEE(s)
        - Reg. Guides
        - SRP (Nuc. Reg. 0800)
        - Others
      - Includes a description of the rational behind the standards/guidance provided
      - Identifies responsible discipline(s)/group(s) for requirements listed
        - Seismic - Civil
        - Switchyard - Transmission
        - Control Logic - I&C
    - Archive Actuals
      - Compilation of actual design basis information retrieved from archive sources reviewed
  - Process Flow Chart


DEVEL. BOUNDARY/ INTERF. DOC.
DEVEL. SYS. BASELINE DOC.
CONDUCT ARCHIVE REVIEWS/DISPOSITION BY SYS./DISCIPLINE INTO DB, DI & DEAD
DONE
DEAD
DI
SAVE FOR CRITERIA & VALIDATION
DB
LAYIN ACTUALS AGAINST BASELINE AND PERFORM DISCREP. REVIEW
NONDISCREP. INFO (35-40%)
ID'D DISCREP. (60-65%)
EVAL. DISCREP.'S AS ACCEPT/UNACCEPT & DOCUMENT BASIS
UNACCEPT DISCREP. (PRIM. "HOLES")
(APPROX. 40%)
ACCEPT DISCREP. (APPROX. 60%)
EVAL. ACCEPT DISCREP. RELATIVE TO FUTURE WORK AS ACCEPT OR UNACCEPT AND DOC. BASIS
ACCEPT.
UNACCEPT
IDENTIFY IF ENGR. PRACTICE ALREADY EXIST
NO
ASSIGN ACTION # AND DEVEL. RESOLU. PLAN
YES
IMPLEMENT ACTION PLAN AND FEED BACK INTO DBD OR APP. (AS APPLICABLE)
ENGR. PRACT.
INTEGRATE INTO DBD
INTEGRATE INTO DBD APPENDIX
SK-CAD-A-0085

- Archive Results/Criteria
  - o General
    - o Codes/Standards of Record
    - o Engineering Practice(s)
    - o Calculations
      - Pre OL Weak/Indeterminate
      - Criteria/Assumptions Questionable
  - o Issues Identified To Date
    - o Capacity
    - o Voltage
    - o Short Circuit
- Resulting Work Activities

- Resulting Work Activities
  - o AC Emergency Power System
    - Overview
      - o Load Factor Development
      - o Calculation Flow Chart
        - Capacity
        - Short Circuit
        - Voltage
        - EDG Static and Dynamic Analysis
  - o Instrument System Analysis
  - o Integrated Plan

AC POWER SYSTEM CALCULATION DEVELOPMENT



* In accordance with the DBD-Design Deficiency Resolution Procedure

SK-CAD-A-0086

- Capacity

  - o Sensitivity Runs Complete
  - o Results
    - October JCO
      - o Load Reduction/Balancing via Special Procedures
      - o Modifications
        - MCC 6 Refeed - Compl.
        - Turb. Load Refeed - 1988 RFO
        - Load Cable Repl. - 1988 RFO
        - Vent. Load Refeed - 1988 RFO
      - o Load Feeder Cables
    - Post Outage Posture
      - o < Equip. Published Ratings
      - o Programmatic Planning in progress to address Load Feeder Cable issues

- Short Circuit

  o Formal Calculations in Place

    - Re-Evaluating For New Load Factors

  o Post Outage Posture

    - No Adverse Impact Expected

    - MCC 5, 6, 9 & 10 Molded Case Breakers Replaced in 1988 RFO

    - DB50 Modification (1990/1991)

- Voltage

  o Degraded Grid Calculation in Place

    - Re-Evaluating For New Load Factors

    - Adding Other Scenarios

  o Post Outage Posture

    - No Adverse Impact Expected

- EDG Capacity
  - Formal Calculation Missing
    - Calc Scheduled For Development
      - Considers New Load Factors
      - Uses Design Brake Horsepower
      - Evaluating NRR Recommendation on Pump/Motor Testing within Integrated Plan Development
  - Post Outage Posture
    - No Adverse Impact Expected
- EDG Dynamic Analysis
  - Formal Calculation Missing
    - Calc Scheduled For Development
      - Uses Design Brake Horsepower
      - Evaluating NRR Recommendation on Pump Motor Testing within Integrated Plan Development
  - Post Outage Posture
    - No Adverse Impact Expected

- Instrument System Analysis
  - Formal Short Circuit Calculation In Place
  - Formal Voltage and Capacity Calculation Missing
    - Calculation Scheduled For Development
      - System utilizes Regulated Voltage Supply
      - Calculations to be completed as part of PCN 85-032/04
  - Post Outage Posture
    - No Adverse Impact Expected

CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON UNIT-2

EDG Static Analysis — 1/1/89 — 6/30*

EDG Dynamic Analysis — 1/1/89 — 6/30*

Instrument System Analysis — 3/1/89 — 12/31/89

AC System Analysis — 1/31/89

Integrated Plan (Conceptual) — 12/31/88
- o Cable Amp.
- o DC Sys. Issues
- o Control Loop
- o Pump/Motor Testing Evaluation

* Schedule Does Not Include Testing As Discussed With NRR

- Schedule Considerations
  - Risk For Future Shutdowns
  - Expedited Schedule

- Risk For Future Shutdowns
  - None Anticipated
    - Isolated Risk Not Known

- Expedited Schedule
  - Schedule has been expedited to the extent practical assuring technical completeness and relationship of all calculations
  - Further expediting may be possible as individual tasks are better defined
  - Emphasis has been/is being placed on calculations involving priority areas (i.e. Ampacity)
  - The workscope represented herein is considered significant in both time and resources

CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON UNIT-2

- Summary
  - Significant Commitment to Issues
  - Aggressive Yet Deliberate
  - Proper Emphasis on Safety

ROBINSON

SERVICE WATER SYSTEM

* HISTORY
* RECENT PROBLEMS
* CURRENT EFFORTS
* FUTURE PLANS

ROBINSON

RECENT PROBLEMS

* MICROBIOLOGICAL CORROSION
* HVH COOLER FOULING

ROBINSON

CURRENT EFFORTS

* PIPE CHANGE OUT IN CV
* FLOW BALANCE
* EDDY CURRENT HVH COOLERS
* TEMPERATURE MONITORING HVH-4
* DIFFERENTIAL PRESSURE MONITORING HVH-4
* SLEEVE MAINTENANCE

ROBINSON

FUTURE PLANS

* REPLACE RAB PIPING
* HVH CHLORINATION SYSTEM
* SIDE STREAM MONITOR
* COMPONENT LAYUP PROCEDURE
* PERFORMANCE MONITORING
* GENERIC LETTER