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SUBJECT: Provides documentation of NUREG-0737 items.Submittals re emergency preparedness & control room habitability forthcoming.

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FILE: NG-3514(R) December 31, 1980 SERIAL NO.: NO-80-1946

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

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
POST TMI REQUIREMENTS CONTAINED IN NUREG-0737

Dear Mr. Eisenhut:

As described in our letter of December 15, 1980, Carolina Power & Light Company (CP&L) hereby provides in the attached enclosures required documentation for the below listed items from NUREG-0737 - "Clarification of TMI Action Plan Requirements". The lefthand column of the below table gives the major item title from NUREG-0737 and the righthand column gives the description of the item subpart requiring documentation at this time.

	Item Title	Description
I.A.1.1	Shift Technical Advisor	3. Trained per LL Cat B 4. Describe long term program
I.C.1	Short Term accident & procedures review	2. ICC a) Reanalyze and propose guidelines 3. Transients & Accidents a) Reanalyze and propose guidelines
I.C.6	Verify correct performance of operating activities	Revise performance procedures
II.B.2	Plant Shielding	2. Plant modifications 3. Environmental Qualification
II.B.3	Postaccident Sampling	2. Plant modifications
II.B.4	Training for mitigating core damage	1. Develop training program
II.E.4.2	Containment Isolation Dependability	5. Containment Pressure Setpoint
II.K.3	B&O Task Force	17. ECC system outages
III.D.3.3	Inplant radiation	2. Modifications to accurately measure I_2

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Submittals on Emergency Preparedness (Item III.A.2) and Control Room Habitability (Item III.D.3.4) are being sent under separate cover.

We trust this letter is responsive to your requirements at this time, and stand prepared to provide additional information if you so desire.

Yours very truly,

E. E. Utley
Executive Vice President
Power Supply and
Engineering & Construction

JJS/dk (N#16)
Attachments

cc: Mr. J. D. Neighbors (NRC)

Item I.A.1.1 Shift Technical Advisor

CP&L Response to NRC Submittal Requirements:

In response to NUREG-0737, Item I.A.1.1, Shift Technical Advisor (STA), attachment one is a description of the STA program conducted at the H. B. Robinson Steam Electric Plant in 1980, including the planned requalification training. The long-term STA Training Program is described in attachment two, and includes a comparison with Sections 5 and 6 of the INPO position paper dated April 30, 1980, concerning STA training and our plans for the long-term phase out of the STA.

The STA duties are separated into two distinct functional responsibilities. They are 1) operating experience assessment and 2) accident assessment. Both functions are performed by the STA group to ensure proper understanding of the two functions by all individuals (STA) involved. This is accomplished by assignment of STA personnel on a scheduled rotating basis.

The operating experience assessment function provides additional capability, dedicated to concern for the safety of the plant, to perform engineering evaluations of plant operations. A portion of the STA group at any one time is a dedicated day-shift function and receives training in normal and off normal operations. The accident assessment function provides additional capability, dedicated to the concern for safety of the plant, and for diagnosis of off normal events. This function of the group is available on shift to augment the operating shift as required. The individual(s) who perform this function have other nonaccident duties related to plant safety.

The STA's are B.S. Degreed Engineers trained in normal and off normal operations. Retraining will be conducted annually as described in attachment one. The group will remain cognizant of current operating experience evolutions through the operating experience assessment functions. They will have no other direct operating duties that might detract from their STA duties when performing this function.

The Shift Technical Advisors are available on site for both the operating experience and accident assessment functions. Assignment during the accident assessment function includes periods where the STA is on site but not restricted to the control room. Being on site, the STA will be capable of responding to an emergency situation within ten minutes of being alerted by the shift supervisor.

Full implementation and compliance of the requirements for STA Training set forth in NUREG-0578, as clarified or modified by D. G. Eisenhut's letter of September 13, 1979, H. R. Denton's letter of October 30, 1979, D. G. Eisenhut's letter to Mr. T. D. Keenan of November 14, 1979, NUREG-0660 and NUREG-0737 is demonstrated in attachments one and two.

ATTACHMENT ONE TO ITEM I.A.1.1

TRAINING THAT MEETS THE LESSONS-LEARNED REQUIREMENTS COMPLETED BY JANUARY 1, 1981

1. Each Shift Technical Advisor holds a B.S. Degree in Engineering or related Sciences.

2. Each STA has completed a plant-specific course covering the following material taught at the SRO level:

   a. Academics (14 weeks)

   b. On-the-job training (6 weeks)

   c. Transient and accident analysis (2 weeks)

   d. Control room management training (1 week)

   e. Simulator training (1 week)

3. Annual Retraining (80 hours minimum)

   a. Classroom training (48 hours minimum)

   b. Simulator training (32 hours minimum)

4. Although the specific number of hours for classroom versus simulator retraining do not agree with Section 6.9 of the INPO document (40 hours simulator, 40 hours classroom), the subject matter will meet the intent of this section of the INPO document and will provide a competent STA. Specifically, the simulator exercises will encompass transients addressed in Section 6.8 and will emphasize the role of the STA. This will be accomplished by having the STA's conduct their simulator retraining along with an operating shift.

Attachment Two to Item I.A.1.1

HBR STA TRAINING PROGRAM FOR INITIAL TRAINING
AFTER JANUARY 1, 1981

1. Education - BS Engineering or Science

2. Experience - 18 months power plant (desirable)

3. Training -

a.	Engineering and Theory Fundamentals	- 300 hrs.	(approx.)
b.	Systems	- 200 hrs.	"
c.	Management/Supervisory	- 40 hrs.	"
d.	Administrative Controls	- 20 hrs.	"
e.	General Operating Procedure	- 30 hrs.	"
f.	Transients/Accident Analysis (EOP's)	- 100 hrs.	"
g.	Simulator	- 96 hrs.	"
		786 hrs.	"
h.	OJT	400 hrs.	"
		1186 hrs.	

4. Annual Retraining - 80 hrs. (approx.)

Attachment Two (continued)

INPO COMPARISON WITH THE HBR TRAINING PROGRAM

1. Selection Criteria

HBR Requirements:

a. BS Degree in Engineering or the Physical Sciences.

b. Greater than 18 months nuclear plant experience is desirable but not mandatory.

c. Complete security check and other preapplicant screening done on all employees.

INPO Comparison

a. Degree requirement is more specific than educational requirements recommended by INPO and will meet or exceed the INPO recommendation.

b. The experience requirement does not agree with the INPO recommendation. Exception is taken in order to increase the number of potential STA's available from the job market. The training program provided in this enclosure will give each candidate the necessary background and experience to provide competent STA's.

2. Qualifications

HBR Requirements:

Prior to assignment to STA duties, each candidate must successfully complete the STA training program after meeting the selection criteria. Candidates who have successfully completed an equivalent program will receive a modified program covering plant-specific differences.

INPO Comparison:

INPO does not have a definitive set of qualifications.

3. Training Program

a. Prerequisites beyond high school diploma (INPO Item 6.1.1)

HBR Requirement:

Due to the selection criteria stated in Item 1 above, Math, Chemistry, and Physics will not be covered during the STA training course. Each candidate's transcript will be checked to verify that it is a valid transcript demonstrating a Bachelor of Science Degree in Engineering or the related Physical Sciences.

INPO Comparison:

This position agrees with INPO recommendation stated in section 6.1.1 of the STA position paper.

b. College level fundamentals (INPO Item 6.1.2)

HBR Requirements:

A minimum of 300 classroom hours will be presented to STA candidates covering the following subjects:

Math	Reactor Theory
Reactor Chemistry	Nuclear Materials
Thermal Sciences	Electrical Sciences
Nuclear Instrumentation	Radiation Protection
Health Physics	

The amount of time dedicated to each subject will vary depending on the background of the STA candidate.

INPO Comparison:

INPO recommends 520 hours contact time and specific hours for each subject in Section 6.1.2. This recommendation is generic and does not assume any previous training in these subjects. Due to the selection criteria and structured on-the-job taining, 300 hours is deemed sufficient.

c. Applied fundamentals (INPO Item 6.2)

HBR Requirement:

This course, taught in Section 3b above, will include plant-specific applications. Therefore, no additional time is required.

INPO Comparison:

This item complies with Section 6.2 of the INPO position paper.

d. Management Skills (INPO Item 6.3)

HBR Requirement:

The STA course includes one week of management training.

INPO Comparison:

This complies with the INPO document.

e. Systems Training (INPO Item 6.4)

HBR Requirement:

Each candidate will receive a minimum of 200 contact hours training covering plant-specific systems.

INPO Comparison:

This meets with the time recommended in Item 6.4 of the INPO position paper. However, specific systems covered will vary from group to group based on experience and student needs.

f. Administrative Controls (INPO Item 6.5)

HBR Requirement:

Each candidate will receive a minimum of 20 contact hours covering administrative procedures and controls as part of the STA course. This time is in addition to general employee training, plant orientation training, and structured on-the-job training.

INPO Comparison:

INPO recommends a total of 80 contact hours to cover administrative controls. The 60 hour difference is justified based on the structured on-the-job training, general employee training, and plant orientation received separate from the STA training course and which can be equated to the difference.

g. General Operating Procedures (INPO Item 6.6)

HBR Requirement:

Each candidate will receive a minimum of 30 contact hours covering general operating procedures; this will be reinforced during the on-the-job training.

INPO Comparison: (This concurs with the INPO Document)

INPO recommends 30 contact hours, but does not address on-the-job training. Thirty hours classroom, plus reinforcement during on-the-job training provides the students with a better understanding of the general operating procedures.

h. Transient and Accident Analysis (INPO Item 6.7)

HBR Requirement:

Each student will receive a minimum of 100 hours training in transient and accident analysis and emergency procedures.

INPO Comparison:

INPO recommends 30 contact hours in these subjects in Section 6.7 of the INPO position paper.

i. Simulator Training (INPO Item 6.8)

HBR Requirement:

Each candidate will receive a minimum of 96 hours of simulator training on the S. Harris Simulator.

INPO Comparison:

INPO recommendation for 50 hours simulator training coupled with 50 hours classroom training is obviously designed to accomodate vendors. Ninety-six hours simulator time with no classroom time provides the student with a better understanding of plant normal and abnormal operations.

j. Structured On-the-job Training (No INPO Requirement)

HBR Requirement:

Each STA candidate must successfully complete a minimum of 400 hours of structured on-the-job training. This on-the-job training will be completed through the use of qualification cards and/or walk through exams.

INPO Comparison:

INPO does not address this area. The structured on-the-job training will provide a better understanding of systems, operations, and theory application than an equal amount of classroom training could achieve.

4. Long-term Phase Out of STA's

It is our intention to upgrade the shift supervisor's level of knowledge and modify the control room, as necessary, to better enhance human factors engineering. Once the guidelines for these items are established, we will phase out the STA's on a timely basis in favor of the upgraded shift supervisors and control rooms. We are presently planning to provide college level training to the operating personnel in order to meet or to exceed the NRC Guidelines when established.

ITEM I.C.1 - GUIDANCE FOR THE EVALUATION AND DEVELOPMENT OF PROCEDURES FOR TRANSIENTS AND ACCIDENTS

CP&L Response to NRC Submittal Requirements:

In the Clarification of the NUREG-0737 requirement "for reanalysis of transients and accidents and inadequate core cooling and preparation of guidelines for development of emergency procedures," NUREG-0737 states:

> Owners' groups or vendor submittals may be referenced as appropriate to support this reanalysis. If owners' group or vendor submittals have already been forwarded to the staff for review, a brief description of the submittals and justification of their adequacy to support guideline development is all that is required.

Carolina Power & Light Company (CP&L) has participated, and will continue to participate, in the Westinghouse Owners' Group program to develop Emergency Procedure Gudielines for Westinghouse Pressurized Water Reactors. On December 15, 1980 the Westinghouse Owners' Group transmitted Owners' Group letter OG-47 from R. W. Jurgensen to S. S. Hanauer which described the ongoing Owners' Group program to resolve this item. CP&L believes that the Owners' Group letter fully satisfies the present documentation requirement for this item and that the program described will fully satisfy the intent of the subject item.

ITEM I.C.6 - GUIDANCE ON PROCEDURES FOR VERIFYING CORRECT PERFORMANCE OF OPERATING ACTIVITIES

CP&L Response to NRC Submittal Requirements:

In a letter dated December 15, 1980, Carolina Power & Light Company (CP&L) committed to provide a description of measures being performed at H. B. Robinson in this area and CP&L's position on the remaining portions of the item. This information is provided below:

The clarification section of Item I.C.6 appears to reference as yet unissued revisions to ANSI N18.7-1972 (ANS 3.2), "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," and Regulatory Guide 1.33, "Quality Assurance Program Requirements (Operation)." Since Item I.C.6 is a new requirement for operating plants, CP&L's staff which would be responsible for revising the affected Robinson Plant procedures has not completely reviewed the apparent proposed revisions to ANSI N18.7 and Regulatory Guide 1.33. Thus, CP&L cannot commit to compliance with these revisions or provide a schedule for compliance at this time. CP&L is presently committed to ANSI N18.7-1976.

The following paragraphs address our comments and concerns regarding sub-items 1 through 5 and the "note" included in the "clarification" section of Item I.C.6:

1. "Applicability of the guidance of Section 5.2.6 should be extended to cover surveillance testing in addition to maintenance."

   CP&L has found this sub-item to be unclear. ANSI N18.7-1972 (ANS 3.2) was referenced earlier in the "clarification" section of Item I.C.6 and this sentence appears to be referencing back to it. ANSI N18.7-1972 was reviewed but it does not contain a Section 5.2.6. CP&L considers the applicable administrative controls at the Robinson Plant to be in compliance with Section 5.2.6 of ANSI N18.7-1976.

   However, CP&L has recognized the need for a second verification of equipment status for certain important plant systems. CP&L is presently in the process of revising the Unit No. 2 operating procedures (the procedures under which the equipment is normally operated), operating work procedures (the procedures under which components required by the Technical Specifications are taken out of and returned to service for maintenance), and the general procedures for filling and venting the Reactor Coolant System and for performing a plant heat up to normal operating temperature, to require a second independent licensed operator or qualified auxiliary operator verification of the equipment status. For the general procedures, only the equipment which is operated manually and does not give indication

of its status in the control room will be independently verified. The following systems are affected by these revisions (not every system requires both operating procedures (OP) and operating work procedures (OWP)):

(1) Electrical (OP only)
(2) Service Water
(3) Auxiliary Feedwater
(4) Reactor Coolant
(5) Component Cooling Water
(6) Safety Injection
(7) Residual Heat Removal
(8) Containment Integrity
(9) Containment Air Handling (OWP only)
(10) Waste Releases (OP only)

For the above systems, only the OPs used to place the system in service for power operation are being revised. CP&L considers that the OPs for the above systems which are used during unit shutdown or for operations in a cold shutdown condition do not require second independent status checks. The majority of these revisions have been completed. The Robinson Plant staff expects to fully complete this project by February 27, 1981.

The operating work procedures coupled with the Robinson Plant's clearance and test procedure also specify and document the post maintenance testing required for each item of equipment. Thus, CP&L considers the normal operating functions and both routine and corrective maintenance activities to be thoroughly and adequately controlled.

2. "In lieu of any designated senior reactor operator (SRO), the authority to release systems and equipment for maintenance or surveillance testing or return-to-service may be delegated to an on-shift SRO, provided provisions are made to ensure that the shift supervisor is kept fully informed of system status."

Our H. B. Robinson Plant is basically in compliance with this requirement except as follows:

H. B. Robinson is not committed to having a second SRO on shift until July 1, 1982. Therefore, the Robinson Plant procedures allow the shift foreman to delegate the authority to release equipment for maintenance to a control operator (licensed RO).

It is the responsibility of each on-shift foreman to keep himself fully aware of the plant status at all times while on shift. Documentation that the shift foreman is kept informed each time a piece of equipment is released for maintenance does not appear to be required by this item in NUREG-0737 nor does CP&L consider it necessary.

When the Robinson Plant staffing levels reach a point at which an SRO is assigned to each shift (on or before July 1, 1982), our procedures for releasing equipment for maintenance or surveillance testing can be reviewed and revised if necessary.

3. "Except in cases of significant radiation exposure, a second qualified person should verify correct implementation of equipment control measures such as tagging of equipment."

   The basic equipment control measure used at the H. B. Robinson Plant is the local clearance and test procedure. This procedure requires an operator (licensed operator or qualified auxiliary operator) to position and tag the equipment. The individual performing the work then verifies the equipment status and accepts the equipment with his signature on the local clearance and test procedure form. In addition, the operating work procedures for certain important plant systems are being revised to require a second independent verification of the equipment status when it is removed from and returned to service (see Item 1 above).

   These procedures are considered adequate for compliance with this requirement.

4. "Equipment control procedures should include assurance that control room operators are informed of changes in equipment status and the effects of such changes."

   At the H. B. Robinson Plant, equipment status is changed only by, or under the direction of, the control operator on duty.

5. "For the return-to-service of equipment important to safety, a second qualified operator should verify proper systems alignment unless functional testing can be performed without compromising plant safety, and can prove that all equipment, valves, and switches involved in the activity are correctly aligned."

   This requirement is considered satisfied by our actions described under Items 1 and 3 above for the H. B. Robinson Plant.

6. The following comments refer to your note on page I.C.6-2 of NUREG-0737. Your note is as follows:

   "NOTE: A licensed operator possessing knowledge of the systems involved and the relationship of the systems to plant safety would be a "qualified" person. The staff is investigating the level of qualification necessary for other operators to perform these functions."

   CP&L considers individuals qualified as "auxiliary operators," per the Plant's training program, qualified to perform valve lineups and place equipment in service and take it out of service

as directed by the control operator. Manipulations directly affecting reactivity must be performed by a control operator or by his trainee under his direct supervision.

We would recommend that the "qualified" personnel for each facility be determined on a case by case basis after a review of each facility's training program for unlicensed operators.

Item II.B.2 - Design Review of Plant Shielding and Equipment Qualification

CP&L Response to NRC Submittal Requirements:

On December 31, 1979, Carolina Power & Light Company (CP&L) notified the NRC that a Plant Shielding Review had been completed for the H. B. Robinson Plant. This letter further requested that a meeting take place between CP&L and the NRC to discuss the methodology and assumptions used to complete the review, and the subsequent results of the Shield Design Review.

On March 13, 1980 members of the NRC Lessons Learned Task Force met with our staff at H. B. Robinson to review the implementation of the short term items. Several questions were proposed by the NRC staff concerning the H. B. Robinson Shield Design Review. The CP&L responses to those questions were contained in a supplement to the December 31, 1979 letter, issued March 31, 1980. As discussed in the supplement, the only open items were:

1. The completion of an evaluation of radiation effects on vital plant equipment located outside Containment, and

2. Modification necessary to perform post accident sampling of the RCS and Containment atmosphere.

With regard to radiation effects on vital plant equipment outside Containment, CP&L's completed evaluation has indicated that no plant vital equipment outside Containment would be unduly degraded as a result of the postulated radiation fields following a TMI type accident.

In the event of the postulated loss of coolant accident of Regulatory Guide 1.4, the following systems would be required to mitigate the consequences:

1. Safety Injection System (SIS)

2. Containment Spray System (CS)

3. Residual Heat Removal System (RHR)

Only specific components of these systems, located outside containment, would be required to function in high radiation fields, once recirculation has been established. These components are:

1.0 Valve Operators

1.1 Motor Operators

With few exceptions, motor operated valves in the effected systems position automatically upon safety injection initiation. Once positioned for safety injection, these valves do not have to be repositioned to shift into a recirculation mode. Since these motor operated valves fail "as is", only those valves required to be repositioned to support recirculation were considered for degradation. Those motor operated valves are

listed below and do not represent a problem since identical motor operators identified in CP&L's response to IE Bulletin 79-01 dated June 12, 1979, are qualified to 2×10^8 Rads.

Valve No.	System	Function	1 Yr. Integrated Max. Expected Dose
MOV-869	SIS	Hot Leg Injection	1×10^8 RADS
MOV-870 A/B	SIS	Boron Injection Tank Outlet	1×10^8 RADS
MOV-860 A/B	RHR	CV Sump to RHR Suction	1×10^8 RADS
MOV-861 A/B	RHR	CV Sump to RHR Suction	1×10^8 RADS
MOV-864 A/B	RHR/SIS	RWST to SIS/RHR	1×10^8 RADS
MOV-862 A/B	RHR	RHR Suction to RWST	1×10^8 RADS

1.2 Pneumatic/Hydraulic Valve Operators

As with motor operated valves, most pneumatic/hydraulic valves position automatically prior to initiation of recirculation, and are not required to be repositioned. However, two general categories of pneumatic/hydraulic valves require further investigation: 1) those which provide a control function, and therefore must continue to operate in a high radiation field and 2) those which are positioned in other than their failed position, to support recirculation. These valves are listed below and are not considered to be a problem since all their functional parts are metallic.

Valve No.	System	Function
FCV-605	RHR	RHR Hx to Cold Leg FLow Control
HCV-758	RHR	RHR Hx Bypass Flow Control

2.0 Pumps/Motors

The RHR, SI and CS pumps are all required to mitigate the effects of the postualted accident. These pumps would be required to operate in various combinations for various lengths of time depending on the accident scenario.

2.1 RHR/SI Pump Motors

The RHR/SI pump motors are manufactured by Westinghouse. Westinghouse publication WCAP-8754 indicates that the limiting component for radiation exposure endurance is the Thermoelastic Epoxy impregnant. The document further specifies that the expected lifetime dosage to the epoxy impregnant is 2×10^8 rads, which is well above the postulated accident exposure of 1×10^8 Rads.

2.2 CS Pump Motors

The CS pumps are assumed to operate continuously during the SI phase of the accident recovery. These pumps are not expected to be operated once recirculation has commenced, and therefore represent no problem to the accident recovery actions.

3.0 Cable

All cable outside containment, used in Safety Related systems, is identified in CP&L's response to IE Bulletin 79-01 dated June 12, 1979 and is qualified to 2 x 10^8 Rads. The maximum expected dose to any effected cable is 1 x 10^8 Rads.

4.0 Motor Control Centers

Motor Control Centers for plant Safety Related equipment are located in areas where the maximum integrated dose for 1 year is 1.5 x 10^3 Rads. This integrated dose is low enough that no materials in the MCC's are expected to be effected.

5.0 Instrumentation

Three flow transmitters have been identified in emergency procedure EI-1 as being necessary to mitigate the consequences of the postulated accident. The effected flow transmitters are FT-605, FT-940, and FT-943. The sole purpose of these units is to verify to the operator that flow has been established in the RHR/SI systems.

Westinghouse WCAP 7744, Environmental Testing of Engineered Safety Features Related Equipment states that these transmitters have been successfully tested to a level of 2.0 x 10^8 Rads. The above mentioned transmitters, which will receive a total dose of 1.1 x 10^6 Rads, are therefore considered qualified to perform their required functions.

In summary, CP&L has determined that all of the Safety Related Equipment at H. B. Robinson which is necessary to mitigate the consequences of a postulated accident will not be degraded as a result of exposure to the anticipated radiation fields.

With regard to post accident sampling, CP&L has decided to install an "In-Line" Post Accident Sample System at the H. B. Robinson Plant. This item is further discussed under Item II.B.3 Post Accident Sampling Capability.

With regard to the requirements of NUREG 0737, the subject NUREG changes some of the previous requirements of NUREG 0578. In particular, NUREG 0737 is ambiguous as to what noble gas inventory should be used in the RHR Piping. On page II.B.2.2, the last paragraph states that the RHR inventory shall include 100% of the Core Equilibrium Noble Gases. The same paragraph further states

that the source term for Recirculated Depressurized Cooling Water (RHR) need not contain any noble gases.

The Shield Design Review completed at H. B. Robinson in December 1979 assumed that the RHR System Piping contained 100% of the equilibrium noble gas inventory. As this assumption is ultra conservative, CP&L does not intend to perform another Shield Design Review. Additionally it should be pointed out that CP&L did not include the Waste Gas System as a source term in the Shield Design Review because that system is not designed for post accident use.

NUREG 0737 further requires that additional areas of the plant be designated as vital areas. The Technical Support Center (TSC), Control Room, and Hot Chemistry Lab have already been designated as vital areas as indicated in CP&L's March 31, 1980 supplement letter. In addition, the Post Accident Sample Station Control Panel will be situated in a vital area adjacent to the Hot Chemistry Lab. The justification of the determination of vital areas at H. B. Robinson is contained in the March 31, 1980 supplement letter.

This response to NUREG 0737 Item II.B.2 together with the CP&L response to NUREG 0578 dated December 31, 1979 and supplemented March 31, 1980 constitutes CP&L's complete response on this item. CP&L considers this item to be complete.

ITEM II.B.3 - POST ACCIDENT SAMPLING CAPABILITY

CP&L Response to NRC Submittal Requirements:

Carolina Power & Light Company has decided to install an "On Line" Post Accident Sample System at the H. B. Robinson SEP. This System would permit personnel to sample the Reactor Coolant System and the Containment Atmosphere, without exceeding the radiation exposure limits of GDC-19.

The "On Line" System currently being installed at H. B. Robinson is being supplied by Combustion Engineering of Windsor, Connecticut. The System will have the following capabilities:

1) Perform an on line chemical analysis of the Reactor Coolant for pH and Boron.

2) Obtain a Pressurized Reactor Coolant Sample and analyze it for total gas, hydrogen, and oxygen content.

3) Provide the capability to obtain a Diluted Reactor Coolant Gaseous Sample which will be transported to the existing Hot Chemistry Lab where a Quantitative Radioanalysis will be performed.

4) Provide the capability to obtain a Diluted Liquid Reactor Coolant Sample which will be transported to the existing Hot Chemistry Lab where a Quantitative Radioanalysis will be performed.

5) Provide the capability to obtain a Diluted Containment Atmosphere Sample which will be transported to the existing Hot Chemistry Lab where a Hydrogen Analysis and a Quantitative Radioanalysis will be performed.

The Post Accident Sample System will also provide the capability to obtain a Diluted Liquid Reactor Coolant Sample which will be used as a Back-Up Grab Sample for the On-Line Boron Analysis.

Backup Grab Samples for the Reactor Coolant Total Gas and Hydrogen Analyses are not required, as these analyses are not performed "On Line." Instead, they are accomplished by trapping a small volume of Pressurized Reactor Coolant inside the Post Accident Sample Sink and then employing proven methods and techniques to quantify the Total Gas and Hydrogen content of the sample. Additionally, NUREG 0737 only requires that either the Total Gas or the Hydrogen Analysis be performed. Therefore, the need for a backup grab sample to perform these analyses is felt to be redundant and not required.

The Post Accident Sample System will not provide the means with which to perform a Chloride Analysis on the Reactor Coolant Sample. Due to the activity involved with a Reactor Coolant Sample (approximately 10 Ci/ml), present laboratory techniques are inadequate to perform a Chloride Analysis in the Hot Chemistry Lab without overexposing the personnel involved. CP&L has determined that at present there are no proven practical methods of performing a Chloride Analysis on a Reactor Coolant Sample with this anticipated activity. CP&L further requests that the NRC clarify why a Chloride Analysis would be

required. The information it would provide is of little importance in view of the more immediate Chemical and Radioanalysis concerns. The Post Accident Sample System will, however, provide the means to obtain an Undiluted Reactor Coolant Grab Sample, should a practicable Chloride Analysis method become available in the future.

The Post Accident Sample System described above is currently being installed at the H. B. Robinson Plant. CP&L fully expects to have the System installed and operational prior to the January 1982 deadline. CP&L further expects that the Post Accident Sample System will meet the requirements of NUREG 0737 Item II.B.3, except as described above.

ITEM II.B.4 - TRAINING FOR MITIGATING CORE DAMAGE

CP&L Response to NRC Submittal Requirements:

As required by NUREG-0737, an outline of the required Training Program has been developed. The outline of the program is available for review at the plant site. The full program will be available by April 1, 1981.

ITEM II.E.4.2 - CONTAINMENT ISOLATION DEPENDABILITY

CP&L Response to NRC Submittal Requirements:

CP&L has investigated the possibility of modifying the present containment pressure setpoint for Phase A isolation at H. B. Robinson. CP&L believes that the present setpoint of 4 psi as specified in the Plant Technical Specifications is adequate due to the reasons listed below:

The containment pressure instrumentation has an accuracy of $\pm 0.5\%$ for the transmitter and $\pm 0.5\%$ for the comparator. The full scale range of the channel is 80 psi. This translates to a maximum error of $(0.005 + 0.005) \times 80 = 0.8$ psi. The measured noise level on the containment pressure channels is 0.05V O-Peak on a 1-5V span. This translates to:

$$\frac{0.05}{5-1} \times 80 = 1 \text{ psi}$$

The containment is vented between 0.75 and 1.0 psi based on transmitter PT-450B. The transmitter has an accuracy of $\pm 0.5\%$ and the meter has an accuracy of $\pm 2\%$. The full scale range of the channel is 1.5 psi. This translates to a maximum error of $(0.005 + 0.02) \times 1.5 = 0.0375$ psi. Therefore the minimum difference between the containment pressure setpoint (minimum containment pressure setpoint) for Phase A isolation and the venting setpoint (maximum pressure at which vented) is $(4.0 - .8 - 1.0) - (1.0 + .0375) = 1.1625$ psi. CP&L does not believe that a reduction in this margin is warranted, in that the potential for inadvertant Phase A isolations and subsequent initiation of safety injection would be significantly increased.

With regard to clarification (2) of this item, CP&L takes exception to the NRC requiring isolation barriers that meet the requirements of General Design Criteria 54, 55, 56, and 57 on each nonessential containment penetration because the plant was built prior to the issuance of these criteria. This requirement, therefore, is beyond the present licensing base of the plant.

With regard to clarification (4) of this item, all manually operated containment isolation valves on non-essential lines have been locked in the closed position using a chain and padlock arrangement.

With regard to clarification (5), the containment isolation valve unganging requirement is a new requirement, first issued in the NRC letter from D. G. Eisenhut dated Spetember 5, 1980. This did not allow enough time to design and implement an approved modification before the end of the plant outage in effect at that time. Modifying the blowdown valves during plant operation would require closing the valves and could result in undesirable perturbations of the secondary chemistry.

The steam generator blowdown valves will be modified during the next refueling outage to allow them to be opened on a line-by-line basis following the reset of a Phase A containment isolation signal.

CP&L takes exception to unganging the reopening of the containment air sampling valves RMS-1, 2, 3, and 4 and the containment purge valves V12-6, 7, 8, and 9. The systems that these valves are component in require that the valves all be open in order for the systems to operate. The systems are closed loops and opening the inlet without opening the outlet or vice versa would defeat the purposes. CP&L, therefore, does not plan to change the reopening logic of these valves.

ITEM II.K.3.17 - ECC SYSTEM OUTAGES

CP&L Response to NRC Submittal Requirements:

Attached please find the data requested by this item.

"A" DIESEL GENERATOR

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
5-26-76	1105	5-26-76	1225	1:20	Repair Leaking Start Air Solenoid Valve
7-20-76	0930	7-20-76	1502	5:32	Fuel Oil and Lube Oil Leaks
8-31-77	0900	8-31-77	1458	5:58	Clean Oil Cooler Tubes
9-12-77	2120	9-13-77	0953	12:33	Replace Fuel Oil Filters
9-13-77	1310	9-14-77	0000	10:50	Cleaned Ejectors
9-15-77	1240	9-15-77	2133	8:53	Adjusting Fuel Racks
11-02-77	1254	11-02-77	1429	1:35	Replace Expansion Tank Gage Glass
12-09-77	0650	12-07-77	1720	58:30	Inspect Cams, Cam Rollers Cam Shaft, Rep Fuel Lines
12-14-77	1431	12-15-77	1110	20:39	Refuel Oil Line Mod
4-03-78	1324	4-04-78	1457	25:33	Repair Oil Leaks
4-10-78	1855	4-10-78	1935	:40	Could Not Maintain 7900 KW Gov Motor Brush Replaced
7-03-78	2032	7-04-78	0330	6:58	Repair Air Start Solenoids
10-18-78	0703	10-18-78	1717	10:14	Repair Air Start Solenoids
11-30-78	1120	11-30-78	1504	3:44	Changed Fuel Oil Filters
1-09-79	1015	1-09-79	1224	2:09	Check Gov Motor Brushes
1-29-79	0800	1-29-79	1504	7:04	Install Modification
2-08-79	0910	2-09-79	1315	28:05	Repair Oil Recirc Pump
11-05-79	0927	11-05-79	1700	7:33	Repair Cooler Line Leaks
11-06-79	0650	11-06-79	1525	8:35	Repair Cooler Line Leaks
12-17-79	1527	12-17-79	1708	1:41	Install Mod. 457 - Install Starting Air for 10 Sec.
12-31-79	1247	12-31-79	1701	4:14	Repair Fuel Oil Day Tank Makeup Solenoid Valves

"A" DIESEL GENERATOR

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
1-14-80	1826	1-14-80	2134	3:08	Fuel Oil Filter Lead Leak
4-09-80	1148	4-09-80	1500	3:12	Fuel Oil Filter Lead Leak
5-19-80	0940	5-19-80	2051	11:11	Clean S.W. Cooler
6-16-80	1553	6-16-80	2140	5:47	Repair Start Air Solenoid
7-21-80	1720	7-21-80	1954	2:34	Repair Starting Air Solenoi

"B" DIESEL GENERATOR

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
2-03-76	0953	2-03-76	1725	7:22	Replace some ejectors and repair a supercharger leak
2-25-76	0701	2-25-76	1446	7:45	Socket water leak
3-01-76	2034	3-02-76	1517	18:43	Clean ejectors
5-26-76	0915	5-26-76	1101	1:46	Repair starting air solenoid valve
12-26-76	2023	12-26-76	2314	2:51	Change fuel oil filters
12-21-76	1112	12-21-76	1637	5:25	Oil filter "O" ring leaking
1-31-77	1140	1-31-77	1757	6:17	Not listed
2-01-77	0701	2-01-77	1740	10:39	Not listed
8-29-77	0955	8-29-77	1856	9:01	Investigate generator ground alarm
11-02-77	1030	11-02-77	1212	1:42	Replace expansion tools sight glass
12-08-77	1320	12-09-77	1600	27:40	Repair turbo charger
12-12-77	0653	12-14-77	1412	55:19	Inspect cam rollers
4-04-78	1557	4-06-78	1039	39:39	Repair oil leaks
10-11-78	1407	10-11-78	1457	:50	Remove start problem
10-13-78	0915	10-13-78	1802	8:47	Clean air start ck valves
10-17-78	0806	10-17-78	1610	8:04	Clean air start solenoids
11-14-78	1242	11-15-78	1004	21:22	Calib hi temp coolant trip
1-09-79	1240	1-09-79	1500	2:20	Check gov motor brushes
1-16-79	2035	1-17-79	0113	4:38	Repair Lynchroscope switch
1-19-79	1742	1-20-79	0120	7:38	Install Mod-439
2-06-79	1329	2-07-79	1551	26:22	Loading time not met

"B" DIESEL GENERATOR

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
2-15-79	1100	2-15-79	1708	6:08	Replace lube oil circulatin pump bearing
8-03-79	1037	8-03-79	1733	6:56	Repair lube oil recir pump
8-06-79	0825	8-06-79	1748	9:23	Repair lube oil recir pump
11-19-79	1850	11-19-79	2155	3:05	Clean fuel oil makeup solenoid valves
12-10-79	1802	12-10-79	2103	3:01	Replace flexible conduit outboard starting solenoid
12-17-79	1302	12-17-79	1512	2:10	Starting air for 10 sec. Install Mod-457
4-14-80	0815	4-14-80	1241	4:26	Fuel oil line leak
7-14-80	1727	7-14-80	2325	5:58	Repair air start solenoid

"A" AUXILIARY FEEDWATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
3-16-77	0751	4-05-77	1139	438:48	Motor Sparking
4-05-77	1420	4-14-77	1724	219:04	Waiting on QA Accept
6-18-77	0650	6-18-77	0725	:35	
8-17-77	1010	8-17-77	1204	1:54	Checked Motor for Moisture
9-21-77	0900	9-21-77	1523	6:23	Repair Oil Cooler
12-02-77	1758	12-02-77	1920	1:22	Tripped on Over Load
12-05-77	1028	12-05-77	1546	5:18	Inspect Tripping Device Repair Inboard Shaft Seal
12-22-77	1026	12-22-77	1044	:18	Checked Fuses and Overload Setting
4-14-78	1553	4-14-78	1800	2:07	Reset Instantaneous Breaker Trips
4-21-78	0245	4-21-78	1507	12:22	Reset "C" Phase Current Trip
4-21-78	2350	4-22-78	1755	18:05	Tripped on Overcurrent
6-01-78	1020	6-01-78	1646	4:26	Calib. Press. Switch
6-26-78	0746	6-26-78	1628	8:42	Repair Ck. Valve
1-04-79	0655	1-04-79	1715	10:20	Repack Inboard Gland
6-04-79	2000	6-06-79	2030	48:30	Breaker Tripping
10-29-79	1600	10-30-79	1400	22:00	Upgrade Pump Associated Piping
4-17-80	1115	4-19-80	1716	54:01	Replace Motor
6-17-80	1445	6-17-80	1809	3:24	Repair Flinger Ring on Shaft

"B" AUXILIARY FEEDWATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
7-22-77	1530	7-25-77	1615	72:45	Leaking Oil Cooler (Water in Oil)
8-17-77	1209	8-17-77	1238	:29	Check Motor for Moisture
8-19-77	1502	8-19-77	1823	3:23	Check Lift Pressure on Suction Safety
9-18-77	1525	9-20-77	0936	42:11	Breaker Problems
9-22-77	0904	9-22-77	1024	1:20	Fuse Holder Loose
4-11-78	0953	4-14-78	1553	78:00	Tripped on Auto Start Reset Overcurrent Trip
6-02-78	0845	6-02-78	1417	5:32	Calib. Press. Switches
6-27-78	0829	6-27-78	1459	6:30	Repair Disch. Ck Valve
6-07-79	0540	6-07-79	1130	5:50	Pump Tripped
10-29-79	1600	10-30-79	1400	22:00	Upgrade Pump Associated Piping
4-19-80	1731	4-27-80	1147	186:16	Plant in Cold Shutdown Rework Motor

STEAM DRIVEN AFW PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
6-17-76	0824	6-17-76	1040	2:16	Repaired press controller
1-21-77	0400	1-21-77	1345	9:45	Install wind protection
1-23-77	0108	1-27-77	1135	106:28	Changed oil in gov
2-17-77	1312	2-17-77	1627	3:15	Repair STM inlet
3-04-77	0821	3-04-77	1106	2:45	Mod on oil pump Bkr
8-17-77	1140	8-17-77	2228	10:48	Repair casing gasket and pump relief
12-22-77	0904	12-22-77	0932	:28	Pump tripped
12-22-77	1254	12-22-77	1419	1:25	Calibrated discharge pressure trip
4-06-78	2200	4-13-78	0317	149:17	Overspeed trip will not work
4-13-78	0915	4-13-78	1905	9:50	Overspeed trip will not work
4-20-78	1040	4-22-78	0532	42:28	Reset overspeed trip
5-01-78	1140	5-12-78	1215	264:35	Repaired overspeed trip
5-18-78	1320	5-18-78	1443	1:23	Reset overspeed trip tested IAW PT 22.1A
5-19-78	0649	5-19-78	0922	2:33	Tripped out during PFW-10
5-19-78	1016	5-19-78	1306	2:50	BIS as per PT 22.1C
5-24-78	1935	5-24-78	2219	2:44	Vented & BIS as per OWP-3
5-30-78	2020	6-09-78	1817	237:51	Back leakage
6-09-78	2202	10-04-78	1400	2799:58	Troubleshooting overspeed trip
10-04-78	1400	12-31-78	2400	2146:00	Overspeed problem
6-09-78	2202	9-12-79	2035	11022:23	Overspeed problem
10-17-79	0950	10-17-79	1557	6:07	Stroke valve V1-8A

STEAM DRIVEN AFW PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
10-18-79	0806	10-18-79	1545	7:39	Stroke valve V1-8A
10-19-79	0910	10-19-79	1630	7:20	Stroke valve V1-8A
10-22-79	0842	10-22-79	1030	1:48	Cycle V1-8A
3-27-80	0825	3-28-80	1900	34:35	Pump trips on low FW pressure
4-14-80	1139	5-01-80	0153		Plant in cold shutdown sealing steam union leak
5-01-80	0153	5-02-80	1015		Plant Hot
7-02-80	1008	7-02-80	1430	4:22	Investigate oil leak
7-14-80	1150	7-16-80	1940	55:50	Trips out on low disc press

"A" SERVICE WATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
6-05-76	0839	6-05-76	1348	5:09	Change oil
6-07-76	1235	6-07-76	1534	2:59	Change oil
8-16-77	0627	8-16-77	1656	10:29	Replace motor
9-02-77	0707	9-02-77	1347	5:40	Check 480V ground
9-02-77	2117	9-02-77	2248	1:31	Check 480V ground
10-17-78	1643	10-17-78	2009	3:26	Changed oil
10-18-78	0634	10-18-78	1715	11:41	Replace motor
10-19-78	1115	10-19-78	1401	2:46	Replace vent valve
2-05-80	0750	2-05-80	1712	9:22	Replace motor

"B" SERVICE WATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
2-22-77	1325	2-22-77	1627	3:02	Mod on Bkr
3-22-77	0638	3-22-77	2102	14:24	Install new pump
6-20-80	0915	6-20-80	1552	6:37	Replaced pump motor

"C" SERVICE WATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
6-15-76	0955	6-15-76	1121	1:26	Change oil
5-25-77	0608	5-25-77	1848	12:40	Changed motor & pump
1-06-78	0935	1-06-78	1013	:38	Lowered pump shaft
1-09-78	0707	1-09-78	0935	2:28	No working done - high wind
1-17-78	0600	1-17-78	1745	11:45	Repair pump
5-12-78	1245	5-13-78	0824	19:59	Electrical cable skinned by contru.

"D" SERVICE WATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
6-07-76	0800	6-07-76	1045	2:45	Change oil
10-26-76	1335	10-26-76	1505	1:30	Change oil
3-24-77	0800	3-24-77	1444	6:44	Replace motor
4-01-77	0631	4-01-77	1358	7:27	Replace motor Brg.
4-19-78	0807	4-19-78	1805	9:58	Replace motor
8-29-79	1009	8-29-79	1420	4:11	Change motor oil

"A" SERVICE WATER BOOSTER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
9-07-76	0821	9-07-76	1319	4:58	Leaking discharge check valve
3-02-77	0829	3-02-77	1115	2:46	Mod on Bkr
7-10-77	1018	7-10-77	1121	1:03	Inspect check valve
7-11-77	0813	7-11-77	0819	:06	Inspect breaker
7-19-77	1037	7-19-77	1047	:10	Replace breaker overload
8-09-77	0658	8-09-77	1438	7:40	Investigate oil leak
8-24-77	0828	8-24-77	1459	6:31	Replace pump bearings
4-03-78	1140	4-03-78	1406	2:26	Calib. press. switch
1-23-79	0624	1-24-79	0349	21:25	Repair breaker, inspect pump for vibration problem
3-26-79	1006	3-26-79	1241	2:35	Repair motor bearing
3-27-79	0755	3-27-79	1145	3:50	Replace motor bearing
9-06-79	0839	9-06-79	1200	3:21	Calibrate suction pressure gage & switch
5-14-80	0915	5-14-80	1305	3:50	Modification installed time delay in low suc pres

"B" SERVICE WATER BOOSTER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
3-15-76	0811	3-15-76	1536	7:25	Repaired check valve
4-08-76	1218	4-08-76	1328	1:10	Change oil
9-08-76	0753	9-08-76	1013	2:20	Repair discharge check valve
10-18-76	0906	10-18-76	1021	1:15	Repack pump
2-22-77	1325	2-22-77	1627	3:02	Mod on Bkr.
3-14-77	0951	3-14-77	1509	5:18	Replaced oil seals
6-06-77	0827	6-06-77	1939	11:12	Repair oil leak
6-28-77	0840	6-28-77	1048	2:08	Inspect breaker
7-10-77	1205	7-10-77	2000	7:55	Resetting over loads from 85% to 115%
9-08-77	0830	9-08-77	1555	7:25	Repair oil leak on motor bearing
12-12-77	1715	12-12-77	2107	3:52	Replace oil seal
4-11-78	0839	4-11-78	1647	8:08	Calib press switch
5-30-78	0620	5-30-78	1952	11:32	Replace pump bearing
1-16-79	1255	1-16-79	1943	6:48	Repack pump
1-18-79	0630	1-18-79	2348	17:48	Repack pump
2-15-79	0650	2-15-79	1500	8:10	Repack pump
9-06-79	1302	9-06-79	1431	1:29	Calibrate suction gage and pressure switch
5-14-80	1312	5-14-80	1504	3:08	Modification: Install time delay in low suction press

HVH - 1

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
7-21-76	0639	7-21-76	1756	11:17	Motor cooler leak
10-07-76	0653	10-07-76	1415	7:22	Motor cooler leak
10-08-76	0925	10-08-76	1312	3:57	Motor cooler leak
7-18-78	0652	7-18-78	1039	3:47	Repair tube leak
8-10-78	0825	8-10-78	1710	8:45	Repair tube leak
8-11-78	0900	8-11-78	1942	10:42	Repair tube leak
10-11-78	0650	10-11-78	1210	5:20	Repair tube leak
4-06-79	1020	4-06-79	1250	2:30	Repair cooler leak
6-06-79	1802	6-06-79	2020	2:18	Stroke V6-34A

HVH - 2

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
1-12-76	2358	1-13-76	0725	7:27	Repair motor cooler leak
3-31-76	0637	3-31-76	1712	10:45	Motor cooler leak
8-12-76	0841	8-12-76	1522	6:41	Motor cooler leak
10-21-76	0614	10-21-76	1146	5:32	Replace motor cooler
5-13-77	0850	5-13-77	1122	2:32	Cooler leaks
9-28-77	0901	9-28-77	1514	6:13	Cooler leaks
9-29-77	0815	9-29-77	1526	7:11	Cooler leaks
9-30-77	1019	9-29-77	1552	5:33	Cooler leaks
11-25-77	1130	11-25-77	1411	2:41	Cooler leaks
7-04-78	0700	7-04-78	1402	7:02	Repair cooler leak
7-07-78	0930	7-07-78	1108	1:38	Repair cooler leak
8-01-78	1100	8-01-78	1543	4:43	Repair cooler leak
8-02-78	0645	8-02-78	1823	11:38	Repair cooler leak
8-03-78	1115	8-03-78	1550	4:35	Repair cooler leak
8-04-78	0940	8-04-78	1221	2:41	Repair cooler leak
8-07-78	0626	8-07-78	1513	8:47	Repair cooler leak
8-08-78	0938	8-08-78	1217	2:39	Repair cooler leak
8-23-78	0703	8-23-78	1515	8:12	Repair cooler leak
8-24-78	0700	8-24-78	1444	7:44	Repair cooler leak
8-25-78	0634	8-25-78	1121	4:47	Repair cooler leak
9-20-78	0600	9-20-78	1550	9:50	Repair cooler leak
10-23-78	0921	10-23-78	2300	13:39	Repair cooler leak

HVH - 2

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
10-24-78	0845	10-24-78	2210	13:25	Repair cooler leak
11-15-78	1721	11-15-78	2159	4:38	Repair cooler leak
11-28-78	1600	11-28-78	1837	2:37	Repair cooler leak
12-06-78	0658	12-06-78	1600	9:02	Repair cooler leak
12-07-78	1310	12-07-78	1559	2:49	Repair cooler leak
12-08-78	0709	12-08-78	1303	6:12	Repair cooler leak
12-11-78	0644	12-11-78	1031	3:47	Repair cooler leak
1-30-79	0940	1-30-79	1950	10:10	Repair valve V6-34B
2-02-79	0941	2-02-79	2349	14:08	Cooler leak
3-13-79	1203	3-13-79	2200	9:57	Repair cooler leaks

HVH-3

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
7-27-76	1117	7-28-76	0432	17:15	Cooler Outlet Valve Repair
10-04-76	0843	10-04-76	1452	6:09	Replaced Motor Cooler
2-28-77	0930	2-28-77	1114	11:44	Mod. on 633C & 634C
3-02-77	1335	3-02-77	1855	5:20	Repair Air Line to Damper
1-04-78	1350	1-04-78	2315	9:30	Repair Limitorque Valve SW-33C
7-05-78	0630	7-05-78	1410	7:40	Repair Cooler Leak
7-06-78	0605	7-06-78	1014	4:09	Repair Cooler Leak
11-15-78	1217	11-15-78	1515	2:58	Repair Cooler Leak
11-16-78	0958	11-16-78	1258	3:00	Repair Cooler Leak
3-19-79	0956	3-19-79	1548	5:52	Repair Cooler Leak
10-30-79	1130	10-30-79	1508	3:38	Motor Leads Made With Proper Insulation
4-03-80	1603	4-03-80	1612	:09	Lubricate Damper Piston

HVH-4

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
1-12-76	1736	1-12-76	2320	5:44	Repair Motor Cooler Leaks
3-03-76	1950	3-04-76	0233	6:43	Dampers Would Not Test Closed
6-08-76	1127	6-08-76	1625	4:58	Repaired Dampers
6-10-76	1335	6-10-76	2045	7:10	Motor Cooler Leak
9-08-76	2027	9-09-76	1631	20:04	Repaired Dampers
10-06-76	0623	10-06-76	2119	14:46	Motor Cooler Leak
9-15-77	0917	9-15-77	1123	2:06	Repair Fan Cooler Leak
9-16-77	0745	9-16-77	1341	5:56	Repair Fan Cooler Leak
3-14-79	1110	3-14-79	1434	3:24	Repair Cooler Leak

"A" COMPONENT COOLING WATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
5-16-77	0846	5-19-77	1424	77:38	Replace Seals
7-18-77	0845	7-18-77	1105	2:20	Replace Outboard Seal

"B" COMPONENT COOLING WATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
8-24-76	0814	8-24-76	1427	6:13	Replace Outboard Seal
7-01-77	0844	7-01-77	0932	:48	Investigate Inboard and Outboard Seal
8-23-77	0740	8-23-77	2255	15:15	Replace Pump Seal
6-21-78	0918	6-21-78	1505	5:47	Pump Seal Replacement
12-19-79	0615	12-19-79	2036	4:21	Replace Inboard Seal
12-26-79	0856	12-26-79	1849	9:53	Replace Pump Valves

"C" COMPONENT COOLING WATER PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
1-19-76	0905	1-19-76	1616	7:11	Replace Outboard Pump Seal
1-04-77	0800	1-04-77	1619	8:19	Replace Mech. Seals
5-29-77	0842	5-29-77	2057	12:15	Replace Outboard Seal
4-12-78	0005	4-12-78	0037	:32	Breaker Inspection
7-17-79	0819	7-17-79	1709	8:50	Replace Outboard Seal

"A" SPRAY PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
2-15-77	1040	2-15-77	1315	2:35	Mod. on 844B Breaker
3-04-77	1136	3-04-77	1550	4:14	Mod. on 880 A&B Breaker
3-24-77	0220	3-24-77	0520	3:00	Rt. Inspection
4-15-80	0820	4-17-80	0940	49:20	Plant at Cold Shutdown Replace Bearing

"B" SPRAY PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
2-15-77	0852	2-15-77	1010	1:18	Mod on SI 844B Breaker
3-07-77	0711	3-07-77	1239	5:28	Mod on 880 C&D Breaker
3-24-77	0522	3-24-77	1138	6:16	Rt. Inspection

"A" SI PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
3-08-77	2115	3-09-77	0100	3:45	Adjust Disch. Press. Gage

"B" SI PUMP

EQUIPMENT

OUT		IN		ACCUMULATED	REASON FOR
DATE	TIME	DATE	TIME	TIME OUT	OUTAGE
3-25-77	0626	3-25-77	0955	3:29	Rt. Inspection

"C" SI PUMP

EQUIPMENT

OUT		IN		ACCUMULATED TIME OUT	REASON FOR OUTAGE
DATE	TIME	DATE	TIME		
3-25-77	0311	3-25-77	0555	2:44	Rt. Inspection

ITEM III.D.3.3 - IMPROVED IN-PLANT IODINE INSTRUMENTATION UNDER ACCIDENT CONDITIONS

CP&L Response to NRC Submittal Requirements:

As noted in CP&L's December 31, 1979 submittal, and the subsequent review and site visit by your staff per your April 18, 1980 letter, the requirements of NUREG-0578 section 2.1.8.c have been satisfied. These requirements were not changed by NUREG-0737. CP&L, therefore, considers this item complete.