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GRACE,J.N. Region 2, Office of Director

SUBJECT: Responds to violations noted in Insp Rept 50-261/87-06 on 870309-0419. Response submitted prior to issuance of notice of violation based on commitment at 870626 enforcement conference. Corrective actions discussed at conference.

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Dr. J. Nelson Grace, Regional Administrator
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
RESPONSE TO NRC INSPECTION REPORT NO. 50-261/87-06

Dear Dr. Grace:

Enclosed is Carolina Power & Light Company's (CP&L) response to NRC Inspection Report No. 50-261/87-06 for the Safety System Functional Inspection (SSFI) conducted at the H. B. Robinson Plant from March 9 to April 19, 1987. This response is being submitted prior to any issuance of a Notice of Violation based on our commitment at the Enforcement Conference of June 26, 1987, to provide you with such a response.

The response is organized into three parts:

- Enclosure I details CP&L's responses to the four violations proposed in the report.
- Enclosure II details CP&L's responses and provides additional information with regard to the one unresolved item and the twenty-one inspector follow-up items detailed in the report.
- Enclosure III provides additional information about a miscellaneous additional item, Modification 860 Safety Analysis, discussed in the report but not given a regulatory follow number.

We trust that you will find this information useful as you consider further Commission action with regard to this report.

To summarize, CP&L acknowledges one of the four proposed violations. We agree that discrepancies and inadequacies existed in the surveillance test used to load test the safety-related batteries. Carolina Power & Light Company does not believe that this proposed violation merits escalated enforcement action, however, because those

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problems have been corrected and the batteries have been successfully tested as required. Carolina Power & Light Company believes that the remaining three proposed violations are not justified. Specifically, with regard to the testing of fuel oil for the Emergency Diesel Generators, we believe we have a well documented agreement with the Commission on our commitments, with which we are in compliance, and the record of testing performed supports our denial of this violation. With regard to implementation of Quality Assurance requirements, we feel that a successful and multi-tiered program is in place for identifying, evaluating, and correcting conditions adverse to quality at the H. B. Robinson Plant which fully meets the requirements of our commitments to 10 CFR 50, Appendix B, and that demonstrated management involvement and oversight substantiates our position denying this violation. Finally, we believe that CP&L has gone far beyond minimal efforts to comply with Appendix R requirements. Carolina Power & Light Company has been in the forefront of resolving the compliance requirements within the nuclear industry from the inception of the Appendix R rule and has asserted its leadership in this area by placing the Robinson site in compliance six months ahead of the deadline prescribed by the rule.

The Safety System Functional Inspection conducted by the NRC and the results of an internal SSFI conducted by CP&L at the H. B. Robinson Plant have given us valuable insight into areas where additional improvements in our programs are possible, desirable and, in some cases, required. Our responses in the enclosures to this letter clearly demonstrate our commitment to resolve these issues and to make improvements in our overall program and operation. Carolina Power & Light Company is committed to maintaining the necessary strong management attention and controls required to safely operate the Robinson Plant and to establish a record of continued improvement toward the goal of excellence in operations.

Should you have any questions on this report, please do not hesitate to contact Mr. Guy P. Beatty, Jr., Vice President, Robinson Nuclear Project, or me. We would also welcome a follow-up meeting with you should you desire to further discuss any issues raised in this detailed response.

Yours very truly,

M A McDuffie

for E. E. Utley

EEU/jch (5236JSK)
Enclosures

cc: NRC Document Control Desk
Mr. K. Eccleston (NRC)
Mr. H. Krug (NRC Resident Inspector - RNP)

ENCLOSURE 1

RESPONSE TO PROPOSED VIOLATIONS

1. Violation 50-261/87-06-01 - Failure to adequately implement the requirements of 10 CFR Part 50 Appendix R III.G and III.L., Dedicated Shutdown; paragraph 3.a.(1)(g).

Response

The SSFI Report stated that "the licensee did not provide adequate plant modifications, procedures, training, communications, or lighting to reasonably assure that the requirements of Appendix R could be successfully implemented prior to the established date." In addition, the inspection report implied that CP&L management did not consider a fire a credible event and, therefore, provided inadequate emphasis on the implementation of their Appendix R commitments. Contrary to this conclusion, CP&L believes that it did put adequate emphasis on placing the plant in compliance with Appendix R including retaining experienced contractors to assist in developing CP&L's program. Carolina Power & Light Company believes that with the additional information provided in the following sections, the Commission will conclude that CP&L did have, and does have, the capability in place to safely shut down the plant in the event of an Appendix R fire prior to the established date.

BACKGROUND

Throughout the implementation of Appendix R which began in 1981, CP&L has been active in the industry effort to understand and adequately implement the rule. Carolina Power & Light Company has been a leader in the Nuclear Utility Fire Protection Group (NUFPG) effort to obtain a consistent industry understanding of the Appendix R requirements. Carolina Power & Light Company was a primary participant in the joint NRC/industry seminar held in February 1984 which was designed to obtain a mutual understanding of the Appendix R rule and to exchange and share knowledge and assure that all participant utilities had a consistent level of knowledge and sensitivity to the Appendix R issues. Appendix R is a very complex rule that allows varying interpretations, all of which may be technically correct. Early NRC inspections of Appendix R programs at a number of facilities identified a considerable number of concerns which NRC inspectors judged to be deficiencies. However, not every concern was a deficiency, and the inspection reports did not provide sufficient information to allow one to clearly understand the Staff's interpretation of the Appendix R requirements. The Commission, recognizing the complexity of these requirements, prepared an inspection module and conducted inspector team training to promote consistency among Regions in their application of Appendix R.

Thirteen employees from CP&L attended the NRC Region II workshop held in May 1984 which was designed to explain Appendix R requirements and answer industry questions. Carolina Power & Light Company also reviewed the inspection results at other plants. However, due to the complexity of the rule, and despite every effort to obtain information, new Staff concerns continued to emerge. Therefore, prior to NRC's H. B. Robinson Plant Appendix R audit in February 1985, CP&L contracted with two former NRC Staff members, who were experts in Appendix R inspections, to review our compliance approach in order to provide additional assurance that the H. B. Robinson Plant fire protection program was adequate to meet Appendix R requirements. These experts confirmed that the Robinson program was appropriate. Contrary to the allegation of the SSFI report, CP&L established a thorough program with extensive management involvement and control in order to understand the requirements and to achieve compliance at the H. B. Robinson Plant by July 31, 1985 (six months earlier than the required 10CFR50.48 date).

PROCEDURES

The SSFI Report referred to operator actions such as tripping the emergency diesels and isolating offsite power as extreme and drastic. Appendix R requires licensees to design for a severe fire which would require operators to abandon the control room and shut down the plant from outside the control room assuming the availability and unavailability of offsite power. This postulated event is in itself extreme and drastic. Due to the physical arrangement of the emergency buses at the H. B. Robinson Plant (redundant emergency switchgear is in the same fire area), it was assumed that both emergency buses and significant plant control wiring could be lost due to a fire. In accordance with Section III.G.3 of Appendix R, a dedicated diesel generator and a dedicated bus were provided for equipment requiring power. Based upon entry conditions into the Dedicated Shutdown (DS) procedures, it could become necessary to de-energize the normal emergency buses to prevent the spurious operation of equipment powered from these buses. It should be noted that any shutdown approach which uses DS has to address spurious actuation of the normal systems. Contrary to statements in the SSFI report, we believe these actions put the plant in an analyzed condition as supported by the safe shutdown analysis as opposed to an unanalyzed condition. An unanalyzed condition would be the spurious actuations of equipment on both emergency buses. Furthermore, the approach taken by CP&L was reviewed by the Office of Nuclear Reactor Regulation (NRR) who issued a Safety Evaluation Report (SER) approving this approach. We believe that the capability provided is acceptable and in full compliance with the rule considering the severity of the situation which would require its use.

Carolina Power & Light Company employed a contractor to develop draft shutdown procedures. This effort was directed by the Nuclear Engineering & Licensing Department (NELD) staff. There was no clear NRC or industry guidance on Appendix R shutdown procedures or their format available at the time. Therefore, the procedures developed at another pressurized water reactor facility were used as a guide since that facility had just had a successful Appendix R audit and their procedures represented an approach acceptable to the NRC staff. The original draft went through numerous evolutions in format before the final draft (audit version) was completed. Contrary to the statement in the SSFI Report, these drafts were reviewed and re-reviewed by NELD and Plant Operations. Also, walkdowns were conducted by Engineering to assess the feasibility of the operator actions. The NRC SER dated August 8, 1984 requested that the procedures be available for review prior to July 31, 1985 and, hence, prior to the compliance audit. Contrary to the SSFI Report, Region II did review and walkdown selected draft procedures, including remote shutdown from outside the control room, during the February 1985 Appendix R audit as documented in Inspection Report No. 50-261/85-07, dated March 22, 1985. (Page number 18, Item 7c.) No major concerns were identified. The results of the audit are described later in this response. There is no verification and validation requirement for Appendix R procedures. Carolina Power & Light Company believes, however, that the multiple reviews and walkdowns which were performed provided assurance of the capability designed into these procedures.

The procedures were written such that not every action is required in order to achieve shutdown. For example, even though the Appendix R compliance does not credit the use of MCC 5 for shutdown, the preferred method would be to remotely operate valves powered from MCC 5. However, if MCC 5 is not available (i.e., fire at MCC 5), then the subject valves would be manually operated and power to MCC 5 would be de-energized to prevent spurious repositioning of the subject valves. The SSFI Report questioned whether a step was missing in Dedicated Shutdown Procedure DSP-001 related to the sequence of energizing MCC 5. The inspector's concern that safe shutdown may be prevented, in that particular instance, is unfounded since energizing MCC 5 is not required. More appropriately, this observation by the inspector may have indicated a need to clarify some of the procedure steps in order to eliminate any possible confusion. Recent revisions to the procedures have corrected these concerns.

The SSFI team recommendations were valid with regard to human factors considerations. We agree that these items would not of themselves prevent the conduct of safe shutdown procedures but should be considered as possible procedure enhancements. Several of these recommendations have already been incorporated in the procedures including a separate diagnostic procedure to better define entry conditions into the Dedicated Shutdown Procedures (DSP).

LIGHTING

The contractor provided drawings based on the procedures which depicted access and egress routes for each operator and showed components requiring manual operations. Corporate Engineering reviewed these drawings against the draft Dedicated Shutdown Procedures and determined the lighting design requirements (approximately 80 eight-hour battery units). Engineering performed design walkdowns and Plant Operations participated in an acceptance test to assess adequacy of illumination to perform the required actions. It should be noted that eight-hour lighting units were not provided for all actions in the procedures, but only those required actions. For example, contrary to the SSFI Report, eight-hour battery lighting units are not required for access to the Dedicated Shutdown diesel since the diesel is operated remotely from the 4 KV switchgear room. Appendix R does not require analyzing for a fire and a single failure (i.e., diesel generator trip); nevertheless, portable flashlights are provided to the operators as an option to go to the Dedicated Shutdown diesel. Battery units are not required, and an exemption to use flashlights was not necessary.

Also, lighting is not required to the Steam Driven AFW pump local speed controller since actions in this area, although possible, are not required by the safe shutdown analysis or Appendix R compliance basis. Also, following the SSFI, the lighting for the access ladder area from the turbine deck to the AFW control valves was reconfirmed on May 14, 1987, to be adequate. Following the SSFI, additional lighting was installed in areas where CP&L believed additional lighting would be beneficial. This additional lighting should resolve the SSFI team concerns with lighting.

The SSFI Report suggests that inadequate lighting is provided for two situations for which exemptions were requested, noting that the exemptions have not yet been granted. These two exemption requests were previewed with the Auxiliary Systems

Branch of NRC prior to submittal and received favorable feedback. We consider these exemptions still pending, although it has been over two years since the requests were submitted. This is not unusual in that two other exemptions were granted in 1986, also after more than two years.

It should be noted, however, that portable lighting is provided for the operators for these "outdoor situations"; and as such, the pending status of these exemption requests should have no impact on safe shutdown.

COMMUNICATIONS

The communications capability, depending on the fire area and Dedicated Shutdown procedure in use, consists of a combination of the PA system, sound-powered phones, and direct communications between portable two-way radio units. In most fire situations, this combination of communications capability should be more than adequate. However, for a "worst case" Appendix R fire, with loss of offsite power, it is necessary to depend on direct portable-to-portable communications and sound-powered phones. Prior to July 31, 1985, tests were conducted to ensure this capability. In some areas, radio signals were "noisy" and required the operator to move to establish "clear communications." In a limited number of locations, it was necessary to communicate instructions by relay via the third operator. During the initial walkdowns and testing conducted, the communications capability was deemed adequate.

Following the SSFI, a previously planned radio system with a repeater was provided to Operations which has resolved the communications concern raised by the SSFI team. The repeater's power supply, however, could be affected by one fire scenario. Therefore, the power supply will be moved to the DS bus by December 1987. In the interim, the procedures allow for the possibility of the repeater not being available and provide mitigating actions should that occur.

MODIFICATIONS

Contrary to statements in the SSFI that CP&L proposed replacing most of the plant modifications with manual operator actions and post-fire repair procedures, CP&L believes it did provide adequate plant modifications to meet Appendix R, including over ten additional alternate shutdown related modifications.

An estimated $30 million has been expended to date on implementation of fire protection requirements at the H. B. Robinson Plant, including Appendix R modifications.

CP&L believes that the shutdown approach taken for the H. B. Robinson Plant is the best approach considering the lack of inherent safe shutdown train separation and the unique associated circuit problems to be dealt with.

TRAINING

The initial training conducted on the Dedicated Shutdown Procedures was taught by the contractor working with CP&L on the procedure development. The training centered around the concepts and details of why the actions are taken. It was not intended to be a step-by-step introduction to the procedures. The procedures were in draft form at the time of the training and were used as handouts during the presentations. Changes to the procedures after the training consisted of administrative changes including improved consistency, plant-specific wording and format. The training was conducted over a six-week period in May and June 1985 and lasted approximately two days per class.

The lesson plans used during the initial training were revised during the course to implement operator feedback from the training. The original lesson plans were revised by the contractor and turned over to the H. B. Robinson Training Unit. The revised lesson plans were implemented into the initial training programs for operators at the Reactor Operator (RO) and Senior Reactor Operator (SRO) levels. The lesson plans were also included in the subjects for annual retraining.

Although the work outlined in the repair procedures was considered to be "skill-of-the-craft," an introduction into the basis for the DSPs was presented as part of the Continuing Training Program for Mechanics and Electricians. This included an overview of the repair procedures for the electricians. This training was conducted for both mechanics and electricians.

Understandably, CP&L was not pleased with the results of the operator walkthrough of the DSPs conducted by the SSFI team. Several areas were identified where increased operator knowledge and awareness were needed. As a result, CP&L has conducted 16 hours of retraining for all operators prior to returning to power operations. The details of this training were discussed in CP&L's letter of June 4, 1987, and at the June 26, 1987, Enforcement Conference.

While CP&L was discouraged by the results of the walkthroughs, we believe that the SSFI team failed to recognize the resources that would have been available to the operating crew within a short time of the postulated fire. A fire of the magnitude requiring the use of the DSPs would have triggered a Site Emergency and quickly brought to bear the full management, technical, and manpower resources of the Operations Support Center, the Technical Support Center and the Emergency Operations Facility. Despite the difficulties noted in the walkthroughs, CP&L believes that the operators would have been able to achieve safe shutdown and cold shutdown within the required 72 hours should the need have arisen.

FEBRUARY 1985 APPENDIX R AUDIT

The NRC conducted a special fire protection inspection of the H. B. Robinson facility on February 4 through 8, 1985 utilizing specially trained Appendix R inspectors. The inspection was scheduled prior to the required compliance date to 10CFR50, Appendix R; therefore, available Appendix R documentation was in a draft status, and work was in progress to complete compliance.

Of the 22 Inspector Follow-Up Items (IFIs), only 4 involved concerns with the technical basis of the Dedicated Shutdown Procedures. The other 18 IFIs were considered "punch list" items for follow-up as a result of the early audit. Resolution of those IFIs which were Appendix R related had either been previously scheduled for completion prior to the audit or were added to the schedule as an enhancement to the program, or were the subject of outstanding NRC correspondence (i.e., exemption requests). The four (4) IFIs concerning the technical basis of the Dedicated Shutdown Procedures (50-261/85-07-15, 16, 17, and 18) were identified as a result of an engineering review and an onsite physical review of the draft DS Procedures by the inspection staff. These IFIs were resolved as part of finalizing the DS Procedures. CP&L was anxious to benefit from this early inspection of DS Procedures to ensure that the shutdown approach was appropriate, reasonable, and consistent with the SER issued by NRR. We believe this was confirmed in the February 1985 inspection. Based on the inspection report and remarks of the inspectors during the audit, no fundamental concerns were conveyed with regard to CP&L's approach or program for achieving compliance by July 31, 1985. As such, we considered the IFIs, in general, to be confirmatory.

The IFIs, together with other Appendix R project tasks, were assigned and tracked using weekly reporting and meetings, and with distribution to management to keep them apprised of progress. To date, nine of twenty-two IFIs from this audit have been reviewed in subsequent inspections by the originating inspector and have been closed out by Inspection Report No. 50-261/86-16, dated July 11, 1986, and Inspection Report No. 50-261/86-18, dated August 23, 1986. An additional five IFIs can be closed from NRC correspondence alone. Those issues raised by the IFIs which required resolution for Appendix R compliance were resolved by CP&L prior to CP&L's commitment date for Appendix R compliance (July 31, 1985).

CONCLUSIONS

Based on CP&L's actions, there is reasonable assurance that the plant can be and could have been placed in safe shutdown, and that cold shutdown could have been achieved in 72 hours as required by Appendix R.

In summary, CP&L took appropriate and methodical actions to assure compliance with Appendix R at Robinson by the commitment date of July 1985.

During the SSFI, some problems were noted with respect to procedures, training, communications, and emergency lighting. Carolina Power & Light Company's corrective actions with respect to these items were described in detail in our letter of June 4, 1987, and at the Enforcement Conference of June 26, 1987. In evaluating these items and the results of our own human factors, technical and regulatory reviews, the action items were divided into those items requiring immediate actions and long term enhancements. All immediate actions have been completed. Enhancements identified by reviews will be evaluated and procedures revised by December 31, 1987.

In conclusion, CP&L took responsible, appropriate, and sound actions to assure compliance with Appendix R requirements. The SSFI team pointed out some problems that needed to be corrected. Those problems have been corrected, and further enhancements are being planned. However, CP&L believes that the conclusions reached by the SSFI team with respect to these items are incorrect, and requests that the Commission reconsider and withdraw the proposed violation.

2. Violation 50-261/87-06-08 - Failure to have adequate procedures to test the battery; paragraph 3.b.(1)(a).

Response

Carolina Power & Light Company acknowledges this proposed violation. The surveillance test used to load test the station safety-related batteries in accordance with the Technical Specifications was inadequate. The load test was developed from an FSAR table which did not include all the loads which could be imposed on the battery. The below listed corrective action has been taken:

Corrective Action

CP&L has completed the verification of Station Batteries A and B sizing adequacy. This verification was accomplished by performing a physical walkdown of the DC Electrical Distribution System supplied from each battery. A revised load profile was developed using field verified load information and was incorporated into battery sizing calculations sets 7988-E1 (Battery B) and 7988-E3 (Battery A). The one hour duty cycle developed by these calculation sets, utilizing the revised load profiles, was incorporated into special procedure SP-772 "Station Battery Service Test." Each station battery was then successfully tested to this procedure during the H. B. Robinson Plant's recent refueling outage.

Planned Actions

The FSAR table will be revised to reflect these changes as part of the next annual FSAR update in 1988 (for 1987 changes).

Additionally, the battery test procedure will be revised to comply with the requirements of IEEE-450-1980 prior to Refueling Outage No. 12, and our commitment to IEEE-450-1980 will be documented in the 1988 update of the FSAR. The Technical Specifications will also be changed as required.

3. Violation 50-261/87-06-11 - Failure to provide adequate procedures to control Emergency Diesel Generator (EDG) fuel oil in the IC tank; paragraph 3.b.(2)(c).

Response

CP&L denies this proposed violation based on the fact that our EDG fuel oil testing program meets our commitments in this area as outlined below. The following is a listing of pertinent docketed correspondence establishing CP&L's commitment:

1. D. G. Eisenhut to all power reactor licensees - January 7, 1980
2. E. E. Utley to D. G. Eisenhut - May 14, 1980
3. S. A. Varga to J. A. Jones - September 30, 1981
4. S. R. Zimmerman to S. A. Varga - November 20, 1981
5. S. A. Varga to J. A. Jones - December 10, 1981

The following excerpts from the May 14, 1980 and November 20, 1981 letters describe the essence of the commitment:

> "CP&L will include Diesel Generator (DG) fuel oil in the QA Program. This will be done by developing procedures, which will be included in the Plant Operating Manual, for the testing of DG fuel oil. Since the Plant Operating Manual is already part of the approved QA Program, this will place testing of DG fuel oil under the QA Program.

These proposed procedures will meet the DG manufacturer's specifications for specific gravity, water and sediment, viscosity, and cloud point. The additional Regulatory Guide recommendation for 90% distillation temperature test will not be performed since the specific gravity and viscosity tests will indicate any out of specification distillation temperature. We believe that the proposed tests will assure continued safe operation of the DGs." (From reference 4. above.)

"The H. B. Robinson Plant will comply with Regulatory Guide 1.137, Fuel Oil Systems for Standby Diesel Generators, Regulatory Position C.2 with the following exceptions:

A. The analyses performed will be limited to API or specific gravity, water and sediment, and viscosity. The specifications that will be met will be those recommended by the emergency diesel generator manufacturer.

B. Since the Unit No. 2 diesel fuel oil storage tank is filled from site storage tanks used for a fossil-fired peaking unit and lightoff oil for a coal-fired unit, the sampling frequency will be as described below:

1. The site storage tank being used will be sampled and analyzed prior to the transfer of oil to the diesel fuel oil storage tank.

2. The Unit No. 2 diesel fuel oil storage tank will be sampled monthly.

The above requirements should ensure fuel oil of adequate quality is available to the emergency diesel generators and allow the sampling to be set up on an easily managed, routine basis." (From reference 2. above.)

The December 10, 1981 NRR letter (reference 5) concurred with this approach.

The following is a brief description of the fuel oil quality control program at the H. B. Robinson site.

The Unit 2 EDG fuel oil storage tank has a capacity of 25,000 gallons and is an above ground storage tank. Technical Specifications require a minimum of 19,000 gallons be maintained in the tank. Annunciator Panel Procedure APP 010-25 requires that the operator, in response to a low level alarm at 20,000 gallons, refill the tank in accordance with Operating Procedure OP-909. However, OP-909 is normally implemented with the tank contents in the 21,000 to 22,000 gallon range.

Operating Procedure OP-909 requires that an acceptable fuel oil analysis be performed in accordance with chemistry procedures for Viscosity, Water and Sediment, and API Gravity prior to the transfer of any fuel oil to the EDG fuel oil storage tank. This procedure controls the transfer of fuel oil from either the IC Turbine storage tanks (75,000 gallon capacity), the Unit 1 lightoff oil tank (45,000 gallon capacity), or a delivery tank truck. All onsite storage tanks are located above ground.

During the period from September 24, 1980 to March 20, 1987, fuel was transferred to the Unit 2 EDG Fuel Oil Storage Tank on 47 occasions. Chemistry results of all samples taken were within required specifications to permit the transfer to take place.

In addition, analyses of the fuel oil contained in the Unit 2 EDG fuel oil tank is performed on a monthly basis for Viscosity, Sediment and Water, API Gravity, and Cloud Point. During the period from November 21, 1980 to June 10, 1987, the monthly Unit 2 EDG Fuel Oil Storage Tank sample was analyzed 79 times. All analyses performed were within required specifications.

Operational Surveillance Test, OST-401, tests each EDG at full load on a biweekly basis. This procedure requires the operator to record the differential pressure drop across the engine fuel oil filters twice during the test. The maximum acceptable value is 10 PSID. If the differential pressure is approaching 10 PSID, the operator will initiate a work request to replace the filters.

Operational Surveillance Test, OST-402, tests the EDG fuel oil system flow on a quarterly basis. This procedure requires that the transfer pump and fuel oil day tank strainers be inspected for clogging if the transfer pump does not deliver a minimum of 7.0 gallons per minute. Both A and B transfer systems are tested. In addition, OST-402 requires, as an initial condition, that the EDG fuel oil storage tank has been cleaned and inspected within the last ten years. The tank was last cleaned and inspected on March 31, 1982. OST-402 was last completed on May 11, 1987, and the "A" and "B" fuel oil transfer pumps flow rates were 11.3 and 11.26 gallons per minute, respectively.

Additional assurance of the quality of No. 2 fuel oil being delivered to the Robinson site is that all No. 2 fuel oil delivered is purchased to the Unit 2 specifications.

In the unlikely event that all fuel stored in Site storage tanks would not meet the chemical acceptance criteria for transfer to the Unit 2 EDG Fuel Oil Storage Tank, there is ample time to acquire fuel from numerous offsite suppliers in the area prior to running out of acceptable quality fuel.

It is CP&L's position that the current EDG fuel oil quality program described herein meets our established commitments and further adequately addresses the concerns expressed in IE Information Notice No. 87-04: Diesel Generator Fails Test Because of Degraded Oil. Carolina Power & Light Company requests that this proposed violation be withdrawn.

4. Violation 50-261/87-06-13 - Failure to adequately implement the requirements of 10 CFR 50 Appendix B in activities affecting the quality of safety-related equipment; paragraphs 3.c. and 3.d.

<u>Response</u>

Carolina Power & Light Company denies this proposed violation. Carolina Power & Light Company believes that the Commission has drawn incorrect conclusions with respect to the implementation of our Quality Assurance Program.

The first incorrect assumption (page 47 of SSFI Inspection Report) is that by having a reference to an outdated QA procedure number in the Plant Operating Manual (POM) that somehow Robinson Plant personnel were inadvertently denied the use of the Corporate Quality Assurance (CQA) Department's methods for identifying nonconformances, i.e., the Nonconformance Report (NCR). This is not true. When QAP-204 was replaced by OQA-104, a cross-reference was placed in the front of the Operations Quality Assurance (OQA) Manual to lead users to the proper procedure. Additionally, the transmittal memorandum for the OQA manual specifically stated that there was no need to update plant procedures with the new OQA procedure number until there was some other valid reason to change the procedure. In actuality, OQA-104 is largely an administrative procedure for tracking NCRs for use by the onsite QA Unit. Robinson Plant personnel's responsibility for identifying nonconformances is appropriately identified in the Plant Operating Manual with reference to OQA procedures. The fact that Robinson Plant personnel actively utilize the NCR process is borne out by the fact that 66 of 133 NCRs written as of June 30, 1987, have been written by plant personnel, not the Onsite QA Unit.

The second incorrect assumption (page 47 of SSFI Inspection Report) is that the Deficiency Tagging System is a nonconformance identification process. This is also not true. The Deficiency Tagging System is an administrative process that assures that a work request is not duplicated on the same deficiency by tagging the equipment to indicate that a work request has been initiated. This also encourages personnel to generate a work request on a deficiency that is not yet tagged.

The third incorrect assumption (page 47 of SSFI Inspection Report) is that the Maintenance Management System (MMS), of which the work request process is a part, does not have provisions for identification of significant deficiencies, management review, trending, root cause analysis or independent review. The SSFI report then identified several examples, the majority of which had to do with the Emergency Diesel Generators. Contrary to the above, the MMS process does require review and screening at several levels including review for Limiting Conditions of Operation (LCO), effects on Environmental Qualification, Quality Status, etc. Any level of review can initiate an NCR if appropriate. Deficiencies are captured, evaluated, and acted upon within the MMS process. With respect to the specific examples noted in the SSFI report the following information is provided:

1. As a result of the February 1986 inspection of the "B" Diesel generator scavenging air blower, maintenance management was notified, a vendor technical representative was consulted and a determination of acceptability for operation was made. The deficiency as found was noted in the record of the inspection, but was not considered significant.

2. As a result of the October 1986 Scavenging Air Temperature Test, the noted discrepancy was elevated for management review and evaluated by the Plant Nuclear Safety Committee (PNSC). The PNSC determined that although the results were not acceptable per the manufacturer's recommendation, the diesel was operable based on functional historical performance and was satisfactory for continued operation.

3. In March 1987, water in the "B" Diesel Generator lube oil exceeding an alert level in a preventive maintenance procedure triggered the desired management review. A technical analysis with regard to the effect of the water on the bearings and the need for further action was made with the help of a vendor technical representative. Although the technical analysis failed to consider the effect on crankcase pressure, the system did not fail to trigger the necessary review and ultimate corrective action.

4. The question dealing with the EDG fuel oil capacity was identified by a third party review (Onsite Nuclear Safety) and forwarded for resolution in the next update of the FSAR. Because the question was not resolved and the basis of the calculation was questioned, it was not included in Amendment 5 to the FSAR. The calculations are currently under review and the FSAR will be revised. This item is being tracked by the Plant Regulatory Compliance Unit. See response to IFI 50-261/87-06-22 in Enclosure II, Item 18.

5. The potential for overloading Station Service Transformers as noted in 1984 was reviewed by management and the PNSC and a modification was prepared and implemented to correct the problem. The potential overloading problem was evaluated as a condition which would shorten transformer life, not as a significant safety problem. This was documented in an Engineering Evaluation prepared by NELD and reviewed by the PNSC.

6. The failure of "A" Battery in 1984 to pass its load test was reviewed with management and verbally with the NRC. It was determined to be not reportable, and management directed the implementation of a modification to remove non-safety-related loads from the battery.

In each of the above cases, the problem was captured, reviewed, evaluated, and corrective action implemented as required.

Carolina Power & Light Company believes that the SSFI Team was not fully aware of the fact that Robinson Nuclear Project utilizes several methods in addition to the NCR process to capture deficiencies and nonconformances. Some of these methods are:

- Routinely scheduled management tours of the plant
- Routine review of Control Operator and Shift Foreman Logs
- Routine Surveillance Tests of plant equipment
- Back shift management surveillances
- The employee Quality Check Program
- Routine review of third party reports, recommendations, bulletins, etc.

Deficiencies noted are tracked and trended using such devices as:

- The Minimum Equipment List (MEL)
- The Regulatory Action Item List (RAIL)
- The Facility Automated Commitment Tracking System (FACTS)
- The Automated Maintenance Management System (AMMS)
- Meeting Action Item Lists
- Plant Nuclear Safety Committee Action Item List

Additionally, plant problems are reviewed at multiple levels and by various methods including:

- Plant General Manager's daily meeting with his Unit Managers
- Department Management Meetings held three times a week
- Department Manager's Weekly Staff Meeting
- Monthly Project Review Meeting with the Senior Vice President
- Monthly Senior Management Meeting with the Senior Vice President and the Senior Executive Vice President

At these meetings deficiencies noted in a number of ways, including NCRs, are reviewed and acted upon. These reviews include trending of NCRs and other significant performance/deficiency parameters.

In summary, CP&L believes that the conclusion reached with regard to this proposed violation is incorrect. The requirements of Appendix B are satisfied by the programs and methods which are in place. As with most programs, however, CP&L believes that some enhancements may be desirable. Therefore, as discussed in our post SSFI meeting in Atlanta, CP&L will review its overall program for identifying and dispositioning deficiencies and nonconformances by the end of 1987 and formulate an action plan to implement any needed improvements.

ENCLOSURE 2

UNRESOLVED ITEM

AND

INSPECTOR FOLLOW-UP ITEMS

1. Unresolved Item 50-261/87-06-20 - DB-50 circuit breakers not properly coordinated electrically and the acceptability of using a PRA in lieu of equipment changeout; paragraph 3.e.(3)(b)1.

Response

In response to this item, CP&L prepared a Probabilistic Risk Assessment (PRA) which justifies continued operation with the DB-50 Breakers as installed. As stated in our letter to Dr. J. N. Grace, dated May 8, 1987, CP&L made certain commitments as follows:

Carolina Power & Light committed to work with NRC to support resolution of this issue within 180 days following return to power from the current refueling (i.e., December 13, 1987). The objective of this milestone would be either an agreement that the PRA be a final resolution or a plan and schedule be submitted for proposed hardware changes.

2. Inspector Follow-Up Item 50-261/87-06-02 - Revision of breaker verification checklist to address power operation breaker alignments; paragraph 3.a.(2).

Response

This item identifies a deficiency in the interface established between Operating Procedure OP-603, Electrical Distribution and the General Procedures (GP). The GPs modify the breaker alignment established in cold shutdown by OP-603 to satisfy Plant Technical Specification requirements. These procedures are correct as they stand alone. However, by using OP-603 at other than cold shutdown for breaker position verification, possible confusion could exist when non-cold shutdown breaker positions are not included.

Revisions to OP-603 and GP-005, Power Operation, have been completed to correct the interface problems associated with the safety injection pump discharge cross connect valve breakers and accumulator discharge valve breakers. Additional revisions of OP-603 to define and address other breakers required to change positions dependent on Plant condition will be completed by September 30, 1987.

3. Inspector Follow-Up Item 50-261/87-06-03 - Emergency Diesel Generator loading indication in the control room; paragraph 3.a.(3)(a).

Response

This item deals with the Control Room operators' ability to maintain the Emergency Diesel Generator (EDG) load within the Technical Specification limit during transient and accident conditions. Specifically, the lack of a KW load meter on the main control board creates the need for additional information to be communicated from the local EDG control panels to the control room, or the need to provide a relationship between KW load and EDG current indications available in the Control Room.

To provide the needed indication of EDG load in the control room, a main control board operator aid correlating EDG current reading to KW will be provided by September 30, 1987.

With regard to communications, the new radio system provided to Operations during the 1987 Refueling Outage includes the use of a repeater that greatly improves the communications between the Control Room and local Plant locations. However, direct communications during EDG operation still requires the local operator to move away from the EDG to be easily understood. The provision of methods for determining KW load on the EDG from the Control Room will, however, greatly lessen the need for communications from the EDG rooms and thus mitigate this concern.

4. Inspector Follow-Up Item 50-261/87-06-04 - Resolution of concerns and recommendations associated with IE Notice 84-69, Operation of Emergency Diesel Generators; paragraph 3.a.(3)(b).

<u>Response</u>

Inspector Follow-Up Item 50-261/87-06-04 identifies three main items of concern which we address in the following manner:

1. A concern with the operating staff knowledge regarding the actions required for the restoration of the Emergency Diesel Generator (EDG) following a loss of offsite power while operating in parallel with site power.

   H. B. Robinson Plant operators are presently trained on what to do if offsite power is lost during load testing (parallel operation with offsite power) of an EDG. This action was considered appropriate in satisfying the original Onsite Nuclear Safety recommendation from IEN 84-69.

   An evaluation of the need to include the above actions in the Plant Operating Procedures is scheduled for completion by October 30, 1987.

2. Inclusion of the Emergency Diesel Generator (EDG) protective relays into the Plant calibration program to assure greater equipment reliability.

   The inclusion of the EDG protective relays in the onsite calibration program is presently under review by Systems Engineering and Maintenance. Calibration of these type of relays, which require special testing equipment not available at the H. B. Robinson Plant, is performed by an offsite CP&L Relay Crew. This practice will continue until the above review is completed as scheduled by December 31, 1987. Corrective actions will be scheduled based on the results of the review.

3. Addition of E-bus breakers 52/18B and 52/28B into the periodic inspection and testing program applicable to the other E-bus breakers.

   Breakers 52/18B and 52/28B had already been added to the Preventive Maintenance Procedures (PM-402, Revision 2, May 27, 1986) prior to the SSFI.

(5236JSK/mf)

5. Inspector Follow-Up Item 50-261/87-06-05 - Resolution of concerns associated with electrical trip/reset buttons on 480 volt emergency bus breakers; paragraph 3.a(6)(b).

Response

This item identifies the need to clearly establish the functional relationship between the breaker position and the use of the electrical trip/reset pushbuttons on 480 VAC buses E-1 and E-2. Two breakers have the pushbuttons operable in the fully racked in position, while the remaining breakers have the pushbuttons operable only in the disconnected test position.

Operator aid labels to indicate the correct operation of the E-1 and E-2 pushbuttons that function in the fully racked in position will be provided by September 30, 1987.

6. Inspector Follow-Up Item 50-261/87-06-06 - Adequacy of DC emergency lighting in Emergency Diesel Generator rooms; paragraph 3.a.(6)(c).

Response

This item identified a human factors concern related to the emergency lighting in the Emergency Diesel Generator Rooms. A review of the Operator actions required in these rooms will be conducted and an assessment made of additional lighting requirements. Any changes which are required in the DC lighting arrangement will be made during Refueling Outage No. 12.

7. Inspector Follow-Up Item 50-261/87-06-07 - Adequacy of communications in the Emergency Diesel Generator rooms; paragraph 3.a.(6)(c).

Response

This item identifies the less than adequate communications capability between the control room and local Emergency Diesel Generator room due to background noise during EDG operation.

The new radio system provided to Operations during the 1987 Refueling Outage includes the use of a repeater that improves the communications between the control room and EDG room. Direct communications during EDG operation requires that the local operator move away from the EDG to be easily understood. The capability to determine KW load from the Control Room (see response to IFI 87-06-03) should significantly lessen the need to conduct this type of communication.

8. Inspector Follow-Up Item 50-261/87-06-09 - Implementation of Emergency Diesel Generator vendor recommendations; paragraph 3.b.(2)(a).

Response

The H. B. Robinson Plant has a program to review and act upon an equipment manufacturers' recommendations. This program is contained within the performance program of the Technical Support Engineering Unit. The program is found in PP-011, "Assurance of Operating Equipment Parameters and Limits" in the Performance Program Manual.

To paraphrase PP-011, the manufacturer's recommendations on equipment are reviewed in the following manner:

1. The recommendation is received by the Performance Engineering Unit.

2. The Performance Engineering Unit assigns a control number for tracking.

3. Performance Engineering then routes the recommendation to the Plant organization that is affected by the recommendation. Simultaneous routings are performed if the recommendation affects more than one organization.

4. The affected organization reviews the recommendation and takes the appropriate action as approved by the Unit's Management.

5. This action is reported to Performance Engineering for logging purposes.

6. The Performance Unit's log is reviewed on a routine basis to track the status of the manufacturer's recommendation.

The vendor recommendations program has been recently reviewed and some needs for improvement noted. The major concerns are with initial capture of the recommendation and timeliness of review. To correct these problems, a Correspondence Control Program is being implemented at the H. B. Robinson Plant to assure capture of recommendations, and the overall vendor communication program is being revised to provide better milestone definition and tracking. These revisions will be accomplished by December 15, 1987.

With regard to the Emergency Diesel Generators, it should be noted that all recommendations by Fairbanks Morse received prior to May 27, 1987 have been reviewed and implemented with the following exceptions:

1. A procedure for periodically checking the generator bearing insulation is under development, pending receipt of additional information from Fairbanks Morse. The bearing insulation was checked and found acceptable in accordance with the vendor recommendations existing at the time during the 1987 Refueling Outage.

2. The new design air inlet housings with the integral baffle plate have been ordered. They will be installed at the next refueling outage after they have been received. Until then the baffle plate bolts will be inspected periodically.

3. The recommendation to do the biweekly diesel generator testing, using a method which requires a slow speed start with the voltage regulator secured, will be evaluated by December 15, 1987. Appropriate action will be implemented based on the results of this evaluation.

9. Inspector Follow-Up Item 50-261/87-06-10 - Emergency Diesel Generator load drift; paragraph 3.b.(2)(b).

Response

During the SSFI, the inspectors noted a downward drift in EDG load when paralleled with the Emergency Bus and fully loaded. In response to this observation, "A" Emergency Diesel Generator Governor was sent to the Woodward Governor Company for testing and refurbishment. This test confirmed the governor was experiencing a downward speed drift of approximately one percent per each 45°F increase in oil temperature. The governor was refurbished with the replacement of a speed spring designed for temperature compensation and the replacement of a worn pilot valve bushing. Post-maintenance testing at Woodward revealed no further drift due to temperature. These tests were observed by an Onsite Nuclear Safety engineer. The governor was installed on the Emergency Diesel Generator and further testing revealed that some drift was still evident. I&C Maintenance found that the voltage regulator was also temperature sensitive by heating and cooling components in the regulator. Suspect components were replaced and several solder connections were resoldered. Post maintenance testing revealed the Emergency Diesel Generator to be stable.

Stability testing was also performed on "B" Emergency Diesel Generator and some drift was noted. This drift was approximately one third of the drift noted on "A" generator. The same repairs and testing noted on "A" generator were performed on "B" generator with similar results.

Corrective actions planned or implemented are as follows:

1. "A" and "B" governors have been refurbished with design improvements incorporated.

2. "A" and "B" voltage regulators have been refurbished.

3. At the request of Maintenance, an evaluation was performed by Onsite Nuclear Safety to determine the capability of the Emergency Diesel Generator governor to perform its design function during emergency operations. The results were positive.

4. The Operations Surveillance Tests on the Emergency Diesel Generator will be reviewed to ensure problems of this nature will be identified. Completion date: September 30, 1987.

5. An engineering review on the feasibility and desirability of replacing the voltage regulators on "A" and "B" Emergency Diesel Generators with a newer model will be initiated. The current plant model is no longer produced or supported and parts are hard to obtain. If appropriate, the replacement schedule will be completed by December 31, 1987.

10. Inspector Follow-Up Item 50-261/87-06-12 - Sixty-minute versus thirty-minute Emergency Diesel Generator operability testing; paragraph 3.b.(2)(d).

Response

This item identified a concern with using a modified normal surveillance procedure to test operable Emergency Diesel Generators while one EDG is inoperable. The normal surveillance for the EDG runs the EDG for approximately one and one-half hours. Operations Work Procedure, OWP-007, Diesel Generators, modified the time requirement to 30 minutes when the surveillance was used on a daily basis while one EDG was inoperable.

OWP-007 has been modified to use the normal surveillance procedure without the reduced runtime.

11. Inspector Follow-Up Item 50-261/87-06-14 - Setpoint differences on EDG instrumentation; paragraph 3.c.(3).

Response

The EDG starting air compressor pressure switches are calibrated each refueling outage. The setpoints are 215 psig for compressor start and 240 psig for compressor stop. Therefore, a minimum of 215 psig is maintained in the starting air tanks at all times. Preliminary calculations indicate that 210 psig tank pressure is sufficient to provide the "eight cold diesel engine starts" referenced in the FSAR.

In order to optimize EDG availability and ensure consistency between plant documentation, this subject will be further investigated. This will entail the following:

1. Establish the basis for the "eight cold starts" requirement.

2. Determine the minimum tank pressure required to provide the required number of starts (with a formal calculation).

3. Determine the optimum compressor start/stop setpoints to minimize compressor cycling or other reliability factors consistent with minimum tank pressure requirements.

4. Review the compressor start/stop pressure switch calibration interval to ensure adequate tank pressure is maintained at all times.

The actions described above will be completed by December 31, 1987.

The EDG lube oil low pressure switch setpoint has been investigated. It was determined that the optimum setpoint is 18 psig decreasing. The switches have been recalibrated to this value and annunciator procedure APP-017 was revised effective May 18, 1987. The system description, SD-005, will be revised by September 30, 1987.

12. Inspector Follow-Up Item 50-261/87-06-15 - Calibration of EDG instrumentation; paragraph 3.c.(4).

Response

A preliminary review of EDG instruments has been completed. As a result of this review, the following instruments have already been added to the periodic calibration program:

EDG expansion tank level switches	LS-1962 A-1 LS-1962 A-2 LS-1962 B-1 LS-1962 B-2
EDG lube oil temperature indicators	TI-4504A TI-4504B
EDG lube oil sump low temperature alarm	TS-4513A TS-4513B
EDG jacket water low temperature alarm	TC-4515A TC-4515B
EDG lube oil pump discharge Hi & Low temp alarms	TS-4518A TS-4518B

The review of Emergency Diesel Generator instrumentation to determine if any additional calibrations are required will be completed by December 31, 1987.

In addition, an overall review of instrumentation calibrations in other plant systems is in progress to determine if additional instruments are required to be added to the calibration program to enhance reliable operation of equipment. This review will be completed by December 31, 1988.

13. Inspector Follow-Up Item 50-261/87-06-16 - Potential failure of EDG room ventilation system; paragraph 3.c.(5).

Response

Inspection Item 3.c.(5) identified the potential for loss of the non-safety-related instrument air system which could provide a common mode failure and incapacitate both Emergency Diesel Generators by allowing the Emergency Diesel Generator rooms temperature to exceed equipment temperature ratings.

Prior to start-up following Refueling Outage No. 11, the Emergency Diesel Generator Room Ventilation system was modified to cause the ventilation intake and exhaust dampers to fail open on a loss of instrument air. This modification therefore ensured that a failure of the instrument air system would not constitute a common mode failure which would result in a loss of both Diesel Generators. In effect, this modification ensures a constant supply of outside air to cool the Emergency Diesel Generator Rooms during diesel operation.

14. Inspector Follow-Up Item 50-261/87-06-17 - Potential loss of auxiliary building ventilation system and radiological release; paragraph 3.c.(6).

Response

Presently, Modification 921 (discussed in IFI 87-06-16) causes the dampers to fail open, but they are maintained closed during normal operation. Additionally, the EDG doors have been placed in a normally closed condition to prevent an unmonitored release via the diesel ventilation exhaust system. Maintaining these doors normally closed creates a slight operational impediment, and this practice will receive further investigation.

The possibility of an unmonitored release due to ventilation system failure will be reviewed by October 15, 1987, to determine if further corrective action should be taken.

15. Inspector Follow-Up Item 50-261/87-06-18 - Control of calculations and technical staff awareness that the FSAR is not a design basis document; paragraphs 3.e.(1)(a) and 3.e.(1)(b).

Response

Carolina Power & Light Company agrees that a program for controlling calculations such that they can be conveniently and consistently retrieved is necessary. It was in this vein that in 1985 the Nuclear Engineering and Licensing Department was authorized to generate calculations to document the "As-Built" Electrical Distribution System. To date, the calculations which have been generated have been indexed with the project or modification which initiated them. The SSFI team recognized that this makes it difficult to recover them in a timely manner. As a result, Carolina Power and Light will develop an indexing system for calculations which will enhance our ability to retrieve calculations in a convenient, consistent manner. The method by which calculations will be indexed will be established by August 31, 1987. A program will then be established by which current, approved calculations related to the design of H. B. Robinson Unit 2 will be included in the index. It is currently anticipated that this program will be approved and functioning by November 1, 1987.

Carolina Power & Light Company's technical staff's awareness that the FSAR is not a complete design basis document will be enhanced during the third and fourth quarter Technical Staff and Management Training sessions. The third quarter training will focus on the inadequacies of using the FSAR as a sole source for design basis documentation with ample examples to reinforce the point. The fourth quarter training will focus on methods that the Central Design Organization uses to reconstitute Design Basis Documents.

16. Inspector Follow-Up Item 50-261/87-06-19 - Evaluation of additional licensee emergency switchgear short circuit current studies; paragraph 3.e.(2)(b).

Response

This item identifies the need for review of calculations associated with short circuit studies for the Emergency Buses and associated Motor Control Centers.

The following cases were analyzed:

- Emergency Diesel Generators (EDGs) in Test
- Post LOCA-LOOP-EDG parallel with Offsite Power

The required short circuit calculations were completed in May of this year as part of CP&L calculation set NT107-E-33-F "Master Fault Current Calculation for H. B. Robinson Steam Electric Plant Unit No. 2." Resultant short circuit values from this calculation have been input to other pertinent calculation sets.

17. Inspector Follow-Up Item 50-261/87-06-21 - Review of licensee's evaluation of molded case circuit breaker interrupting capability; paragraph 3.e.(3)(b)2.

<u>Response</u>

Carolina Power & Light Company has completed its assessment of the issues raised by the SSFI Team concerning Westinghouse Types FA, FB, and EHB molded case circuit breaker interrupting capability. The results of this assessment are embodied in calculation set RN107-E-41-F, Revision 1.

Please note that a copy of this calculation was previously transmitted to the NRC SSFI Team in early May. Several telephone conversations with team members were held shortly thereafter to provide requested clarifications. It is CP&L's understanding that as of the date of this submittal, there are no outstanding NRC concerns relative to this calculation.

Carolina Power & Light Company believes that this calculation demonstrates that the Westinghouse types FA, FB, and EHB breakers presently being utilized in MCCs 5 & 6 have sufficient interrupting capability for their application. As noted in this calculation set, this conclusion is primarily supported by Westinghouse combination starter ratings and Westinghouse fail-safe molded case breaker testing and ratings.

18. Inspector Follow-Up Item 50-261/87-06-22 - Performance of analysis of required EDG fuel oil storage capacity; paragraph 3.e.(4)(c).

<u>Response</u>

Calculations have been performed to show that minimum safety feature equipment can be operated for seven days from one EDG with the Technical Specification required minimum fuel oil supply. These calculations are currently in review to confirm the load profile assumed. These calculations will be completely reviewed and formally documented by December 31, 1987. In addition, the FSAR will be revised to be consistent with the Technical Specifications by the normal FSAR update process, i.e., Amendment 6 in 1988.

19. Inspector Follow-Up Item 50-261/87-06-23 - Review concerns in the EDG starting air system and the "as-built" plant configuration; paragraph 3.e.(4)(d).

Response

The inspection report identified several errors on Drawings G190204-A and G190301. These items have been dispositioned as follows:

1. The depiction of Pressure Switches PS 1961 A and B on Drawing G190204-A was changed from being shown as "in line" to a "tap off" the line.

2. Drawing G190301, Sheets 1961 A and B were revised to show the "as-built" configuration of the instrument loop for PS-1961 A and B.

3. A review of DCN 763-1 and Flow Diagram G190204-A have resulted in the conclusion that Drawing G190204-A, Sheet 1, Rev. 10, does accurately reflect the valve numbers assigned by DCN 763-1.

20. Inspector Follow-Up Item 50-261/87-06-24 - Review of licensee's seismic analysis to modification on EDG air start line; paragraph 3.e.(4)(e).

Response

Inspection Item 87-06-24 identified that a reanalysis of the piping between the Emergency Diesel Generator Starting Air Dryers and the Air Receivers was conducted during the inspection. CP&L believes these calculations show the adequacy of the "as-built" piping arrangement. To ensure the continued adequacy of this piping arrangement, a new support was added so that the arrangement conformed to standard piping support design. The calculations performed during the inspection and the current as-built calculations are available for review.

An additional item addressed in the inspection report related to the use of static analysis as opposed to dynamic analysis.

It is common practice for plants of the Robinson Plant vintage to require static equivalent - 2D seismic analysis, to satisfy structural requirements. If the specific system frequency is not known, peak "g" (acceleration) values are used. This is considered a conservative approach since dynamic analysis with actual frequencies and "g" values would yield lower stresses.

21. Inspector Follow-Up Item 50-261/87-06-25 - Review of battery concerns, paragraph 3.e.(5)(b).

Response

This item raised several concerns with respect to the station batteries including:

1. Calculation EC-84-11 and assumptions used for inverter loading.

2. Acceptability of the daily battery surveillance procedure's 50°F minimum acceptable cell temperature.

3. Ability of Battery "B" to support additional required discharge loading at a 50°F minimum temperature.

4. Lack of interface between different departments in the H. B. Robinson Plant's organization.

5. Performing battery discharge testing (Test Procedure EST-012) with both battery tie breakers closed could result in a loss of both batteries if a station blackout occurred.

These concerns are addressed as follows:

1. EC-84-11 "Battery "A" Load Profile" was written to create a new load profile for the "A" Station Battery following the removal of the Turbine Emergency Bearing Oil Pump and the Air Side Seal Oil Backup Pump from Station Battery "A" loading requirements. The Engineering Calculation was never meant to be a design study for battery sizing or verification of proper sizing for the original installation. It was assumed that since loading of the battery was being reduced and original sizing was correct for existing requirements, that no analysis for sizing was necessary. IEEE 485 and IEEE 450 were used as guides, not as bases, under given plant commitments at the time. The loading requirements of the Updated FSAR and Technical Specifications were reviewed for compliance and found to be satisfactory.

   The amperage value for the inverters was assumed to be 100% design load with no credit taken for reduction in load from equipment taken out of service during the blackout or initial loading less than 100%. An efficiency factor for the inverter was mistakenly left out; this would have caused an approximate non-conservative 10 ampere error at the start of the discharge, increasing to an approximate non-conservative 16 ampere error at the end of the discharge. A review of the service test discharge data showed that this amperage load increase would not have invalidated the service discharge conclusions. A new battery load profile, which supersedes this Engineering Calculation, has been created by NELD.

2. The H. B. Robinson Plant's daily battery surveillance procedure (MST-902) will be evaluated and revised to reflect minimum battery temperature requirements based on most recent load testing data.

   The MST will be revised and provisions made to assure battery temperature remains above the minimum temperature requirements by October 31, 1987.

3. As stated above, the batteries will be maintained above the minimum temperature requirements to assure necessary capacity.

4. Required interface agreements are in effect between the H. B. Robinson Plant staff and other Corporate organizations which support the Plant. There is continual interface and interchange between CNS, ONS, and the H. B. Robinson Plant staff. This is not seen as a generic problem.

5. EST-012 is in the process of being canceled and replaced by MST-920. MST-920 will be revised as discussed under the response to Violation 50-261/87-06-08 (Enclosure 1, Item 2).

22. Inspector Follow-Up Item 50-261/87-06-26 - Review of licensee evaluation of DC breakers short circuit calculations; paragraph 3.e.(5)(c).

Response

This item identified a potential condition for certain DC breakers whereby the interrupting rating may be exceeded under short circuit conditions. In response, Calculation 7988-E2 has been prepared to demonstrate that short circuit current is within system capability. This calculation utilizes the battery vendor's short circuit values and temperature-corrects short circuit currents for maximum permitted cell temperature. Based upon vendor testing per UL standards, breaker short circuit interrupting capability is greater than published data and greater than system available short circuit current. A separate calculation will be performed by October 1, 1987, to demonstrate that the breaker short circuit interrupting capability will not be exceeded considering one charger and the two batteries in parallel at cold shutdown. A preliminary evaluation of this configuration indicates that the breakers are adequate.

ENCLOSURE III

MISCELLANEOUS ITEMS

MODIFICATION M-860 DEFICIENCIES (P#55-58)

Section 3.E.3 of the inspection report states that significant design deficiencies and inadequate 10CFR50.59 Safety Evaluations were identified in plant Modification 860, Electrical Distribution System Expansion. This statement is incorrect and was identified as such to the inspection team during the inspection.

The design deficiencies alluded to in the inspection report appear to be related to the DB-50 Interrupt Capability and one of the secondary functions of Modification 860 which was to limit the fault current contribution to the DB-50s from the offsite power source. This design function was fully satisfied by the installation of current limiting reactors between the station service transformers and the emergency switchgear. The confusion appears to arise from the discovery during the SSFI (12 months after the modification was completed) that the DB-50 Fault Current Calculations did not consider the case in which an Emergency Diesel Generator would provide an additional fault current contribution to the DB-50 breakers while the diesel generator was being tested. Any contribution to fault current by the safety-related Emergency Diesel Generators is totally outside the scope of Modification 860, which was limited to the non-safety-related portion of the offsite power feed to the emergency buses. Even after the DB-50 Fault Current Calculations were revised to include the additional fault current from an Emergency Diesel Generator in test, no changes to Modification 860 were required.

The 10CFR50.59 Safety Evaluation for Modification 860 was identified as being inadequate. The inspection report did not state any reason for this conclusion, but it is assumed to be related to the alleged design deficiency discussed above. Although the modification did recognize that a problem existed with the DB-50 Interrupt Capacity, it was beyond the scope of that modification to solve that problem. The scope of Modification 860 was to reduce the fault current contribution from the offsite supply, which was fully satisfied by the modification. The work performed by that modification does not constitute a change, test, or experiment involving a change to the Technical Specifications, nor does it constitute an unreviewed safety question. As a result, the safety evaluation associated with Modification 860 was a valid and adequate 10CFR50.59 Safety Evaluation.