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April 13, 1984

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Senior Vice President
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W3K84-0842
Q-3-A35.01

Mr. Richard C. DeYoung
Director of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Waterford 3 SES
Corrective Action Plan

REFERENCE: Docket No. 50-382
Construction Appraisal Inspection
Inspection Report 84-07

Dear Mr. DeYoung:

The attached plan provides LP&L's comments and, where felt appropriate, the Corrective Action Program to address our perception of the concerns indicated during and after the Construction Appraisal Team inspection conducted during February and March of this year.

It should be noted that, in view of our objective to load fuel in mid-to-late May 1984, the efforts outlined herein are proceeding at an accelerated pace with necessary actions scheduled for completion in April and May. We hope that any modifications to our efforts required as a result of the NRC finalization of its report will have minimal impact. Comments, however, are solicited as early as possible.

Yours very truly,



R. S. Leddick

RSL/RGB/cb

cc: Mr. J. T. Collins
Regional Administrator
USNRC Region IV

Mr. E. Blake, Mr. W. M. Stevenson

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WATERFORD 3 SES

CORRECTIVE ACTION PLAN

REPORT 84-07

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1. PROGRAM OUTLINE FOR EVALUATION OF FIELD ROUTED ATTACHMENTS TO
CABLE TRAY/HVAC SEISMIC SUPPORTS

OBJECTIVE: Establish a level of confidence with regard to structural adequacy of Cable Tray/HVAC Seismic Supports when evaluated for the additional loads imposed by field routed conduit, piping, tube track and HVAC vertical supports.

PROBLEM
DESCRIPTION: Procedure ASP-IV-58 was established to control the amount of additional loads imposed on engineered cable tray/HVAC seismic supports by the installation of field routed conduit, tube track, small bore nonsafety piping, and HVAC vertical supports. Due to the inconsistent application of the procedural requirements, various seismic supports have additional undocumented loads. This problem has been documented by Ebasco QA Surveillance No. EC-MECH-TK-1, which covered 25 supports all of which when evaluated were found to be acceptable.

DISCUSSION: The Cable Tray/HVAC seismic supports were conservatively designed based on a response frequency criteria. As a result, the load carrying capability of these supports is substantial. The approach to be used in resolving this concern will take advantage of the conservative Waterford design. The program is designed to ensure that support loading configurations are examined and evaluated for acceptability.

PROGRAM: The program description is as follows:

The program involves implementation of the comprehensive review described below. Cable tray/HVAC seismic supports will be subject to a field surveillance in order to find isolated cases of heavily loaded supports which should be evaluated. The program is as follows:

- (1) NY Engineering will develop the maximum loading capacity for various support configurations which would envelope most of the installed supports. The maximum capacity data will be translated into typical hardware configurations, i.e., number and size of conduits which can be attached to a given support.
- (2) Based on the above data, walkdown guidelines will be developed that will allow experienced Civil Structural Engineers to field survey actual installations on a case by case basis. The guidelines will be explicit in that unique variables, such as pipe support attachments, cantilevered conduit supports or cable tray attachments can be appropriately evaluated.

1. (Continued)

- (3) The objective of the surveillance will be to identify cases which do not conform to the walkdown criteria, and thus require further evaluation or possible detailed as-building, and subsequent engineering analysis.
- (4) Appropriate documentation will be generated to ensure that supports are field surveyed. Documentation will consist of a marked up copy of the seismic support drawings for cable trays (G-377 series) or HVAC ducts (G-922 series). Supports which are found to be in conformance with the acceptance criteria by inspection will be checked off. Seismic supports which cannot be accepted by inspection, will be documented on a standard calculation form for on-the-spot evaluation against the guidelines. Those supports which do not conform to the guidelines will be as-built in detail and an engineering analysis performed for acceptance.

The program will be administered by Ebasco Civil Engineering in accordance with approved procedures. Ebasco and LP&L QA surveillance will be conducted on a regular basis to ensure compliance with criteria and procedures. Staffing will consist of structural engineers and designers for the walkdown as well for as engineering analysis.

ASP-IV-58 is currently under revision so that all future attachments to cable tray/HVAC seismic supports will not compound the present concerns. The procedure revision requires that all future attachment requests initiates the complete review of the given seismic support to ensure that all additional loads are properly documented.

IMPLEMENTATION:

Estimated date of completion for the above program is May 15, 1984.

GENERIC IMPLICATIONS:

ASP-IV-58 delineates the mechanism to be used by various disciplines and contractors to integrate data into one system which provides status of installations on Seismic Supports. In basic terms, ASP-IV-58 is a cross-discipline procedure, rather than a conventional one-contractor, single discipline procedure normally used.

Quality Assurance will analyze procedures to ascertain applicable cross-discipline, procedures requiring assessment. Assessment will be provided by auditing applicable procedures to assure compliance.

1. (Continued)

Item 3 of this CAT report references corrective actions to be implemented to assure continued corrective actions on identified items on non-compliance committed to the NRC by LP&L. As ASP-IV-58 is in this category and the corrective action plan detailed should provide added assurance.

2. PROGRAM OUTLINE FOR EVALUATION OF ELECTRICAL RACEWAY

INSTALLATION REGARDING SEPARATION REQUIREMENTS

OBJECTIVE: To establish a high level of confidence that the design installation and verification procedures at Waterford 3 ensure that physical independence of electrical systems will be achieved in accordance with the FSAR commitment to the requirements of IEEE-383-1974 as endorsed by Regulatory Guide 1.75.

PROBLEM

DESCRIPTION: The B-288 series drawings detail requirements for physical separation between redundant safety related raceway and between safety related and non-safety related raceway. Installations exist for which this separation has not been provided and no documentation of acceptability has been generated. It should be noted that for installations involving conduit to tray separation, those tray runs requiring installation of tray covers are to be identified as part of installation via a walkdown of tray. The bulk of the deficiencies noted were identified because cable tray covers had not yet been installed and because procedures did not require inspection of non-safety related conduit for separation from safety related installations.

DISCUSSION: Criteria has been established by Ebasco NY Engineering for acceptability of installations by type of situation. This criteria, in conjunction with existing details for barrier installation, forms the basis for acceptance or corrective action assignment for identified discrepancies.

PROGRAM: Per existing design, separation may be achieved via the installation of tray covers, in lieu of separation of the items by spatial distance alone. For the 31,379 feet of tray to be installed in nuclear plant areas, 13,026 feet of tray cover and fittings were purchased in 1977. This material has been stored on site pending the completion of cable installation. As of April 12, 1984, approximately 11,000 feet of cable tray cover has been installed.

A walkdown is being performed on electrical raceway in nuclear plant areas to identify discrepancies in installations with respect to existing separation design requirements. Identification of tray cover requirements, which is a part of the installation program, will also take place as part of this walkdown.

2. (Continued)

PROGRAM:

This program is an engineering walkdown and is performed in accordance with ASP-IV-141 and under the surveillance of LP&L Quality Assurance. Identified problems will be resolved via rework of the raceway, installation of barriers or evaluation and acceptance by ESSE.

In areas of high raceway concentration,* specific walkdowns have been performed to identify and resolve discrepancies and identify tray cover installation requirements.

* +21 Elev. Swgr Area/Pen Area, +35 Elev. Spread Room/Pen Area

Ebasco Procedure CP-764 will be revised to require a QC Inspection of non-safety related conduit installation to identify discrepancies in separation requirements. Engineering and Quality Control personnel have been trained in separation requirements. Construction supervision will be retrained in these requirements.

IMPLEMENTATION:

The engineering walkdown program for identification of separation concerns is being administered by Ebasco. Containment activities including required barrier installation will be completed by April 15, 1984. RAB activities including barrier installation will be completed by April 30, 1984.

GENERIC IMPLICATIONS:

Concerns addressed in the program outline are specific in nature and the corrective action plan addresses the concern.

3. PROGRAM OUTLINE FOR TRACKING AND REVIEW OF NRC COMMITMENTS

OBJECTIVE: To establish a high level of confidence that commitments made to NRC with regard to items of non-compliance are reviewed for generic applicability and to assure continued compliance with these commitments.

PROBLEM

DESCRIPTION: There is no definitive mechanism detailing methods for tracking and verifying construction corrective action commitments for items of non-compliance. There must also be a mechanism to ensure continuing compliance.

DISCUSSION: LP&L QA is in the process of reviewing items to which LP&L has responded to the NRC, but which have not been closed by the NRC. This program will be performed within the jurisdiction of the Operations QA organization. This includes construction and operations items of non-compliance.

PROGRAM: The LP&L Operations QA Program requires that an audit be performed at least once per six months in the area of Corrective Action. The Nuclear Operations QA Section Procedures controlling the audit function to implement the Technical Specifications requirements will be revised to accomplish the following:

- (1) LP&L QA will verify that corrective action for NRC Items are in fact adequate prior to issuing a response to the NRC. This verification process includes a review to determine that items of noncompliance have been reviewed for generic implications.
- (2) LP&L QA will track and verify that corrective action has been accomplished by dates committed to in the response to the NRC or that the commitment date changed.
- (3) The Corrective Action Audit checklist will include those items of noncompliance for which LP&L has previously responded to the NRC. The items included will be those identified between the two (2) preceding Corrective Action audits. These items will also be included within the audit checklist of the Corrective Action Audit conducted one year later to insure the corrective action for those items remain in compliance with commitments.

IMPLEMENTATION:

Procedure revision and audit of current open items of non-compliance will be completed by April 30, 1984.

3. (Continued)

GENERIC IMPLICATIONS:

None - This deals with a specific shortcoming.

4. PROGRAM OUTLINE FOR EVALUATION OF SUPPORT/RESTRAINT

QUESTIONS ASKED DURING THE "CAT" INSPECTION

OBJECTIVE: Establish a level of confidence regarding support/restraint items raised during the "CAT" Inspection such that no generic problems exist in these areas.

PROBLEM

DESCRIPTION: The following items were addressed during the "CAT" Inspection.

- (1) Gaps on box type restraints.
- (2) Weld symbols for same size and/or flush joints.
- (3) Nonconforming thicknesses of tube steel were installed (3/8" actual vs 1/2" design).
- (4) Differences in actual valve weights as compared to those used in the stress analysis.
- (5) Two restraints had a 3/8" diameter u-bolt and one restraint had a 1/2" diameter u-bolt but all had the same Bergen Paterson part number 283.

DISCUSSION: The above items were addressed during the "CAT" Inspection.

- (1) Gaps that were identified by the "CAT" team member were reviewed and verified as being recorded and evaluated in NCR-W3-2644. No further action is required in this area.
- (2) Weld requirement symbols (for CCRR-1379 & 1381) questioned by the CAT Team were defined.
- (3) The nonconforming tube steel thicknesses (3/8" actual vs 1/2" design) identified during the "CAT" Inspection were evaluated by ESSE and found to be acceptable.
- (4) Two valve weights appeared to be different in the design calculations as opposed to the actual weight. Documentation was provided to show that the difference in the weights had been evaluated by ESSE Stress Analysis and provided to ESSE Supports/Restraints for evaluation of the Supports/Restraints.
- (5) In 1975, when these restraints were originally fabricated, part 283 had a 3/8" diameter shank. The shank diameter was subsequently changed to 1/2" in 1976 but Bergen Paterson kept the same part number. All shanks were correctly used in the design. No further action is required.

PROGRAM: None of the above items are considered significant problems.

4. (Continued)

A sample review of recent new revisions and designs show correct symbols for the flush members. In addition, ESSE Engineers have been instructed to check for correct symbol application as described in the existing design guidelines.

For tube steel thicknesses, a random sample of 100 members will be checked to verify that the design thicknesses agree with the actual thicknesses installed. To date 51 members have been checked and all agree with the design drawings.

With regard to the valve weights, all safety related stress analysis calculations have been reviewed to verify for correct valve weights. Differences will be evaluated for stresses in the pipe and changes in support loads. No physical modifications have been required to date and none are expected.

IMPLEMENTATION:

The above programs are complete.

GENERIC IMPLICATIONS:

None: The items noted are not considered significant enough to indicate that existing programs will not suffice to control each deficiency.

5. PROGRAM OUTLINE FOR EVALUATION OF AS-BUILT
CONDITION OF SEISMICALLY SUPPORTED BLOCK WALLS

OBJECTIVE: Provide a field survey and test program to ascertain the conformance of masonry construction to design drawings and specifications regarding internal reinforcement and grouting.

PROBLEM DESCRIPTION: Documented evidence of inspection of the seismically supported masonry block walls is insufficient to establish compliance with design requirements during installation. This was found by the inspector questioning one particular wall. In order to function as designed, the steel reinforcement and mortar fill must have been installed. About 10% of the walls (19 of 195) have completed engineering inspection reports traceable to them covering the installation of reinforcement and mortar. The remainder have only partially completed inspection reports or general are in-process inspection reports without details.

DISCUSSION: In the event QA/QC information is not available, a field survey and test program reviewed and approved by the staff should be implemented to ascertain the conformance of masonry construction to design drawings and specifications (e.g. rebar and grouting). The program proposed for Waterford 3 will be based on nondestructive examination of a representative sampling of the walls and visual survey of all walls.

PROGRAM: The program consists of the following steps:

- (1) In the case of the specific wall in question, the block was chipped away revealing the steel angles in place as designed.
- (2) Survey a representative sample of 100 of the 195 installed block walls, 50 hollow block and 50 solid block, to ascertain the conformance of masonry construction to design drawings with respect to internal reinforcement and grouting.
- (3) Hollow block walls shall be surveyed by radiography to reveal the presence of vertical rebar, horizontal Dur-o-wall, and mortar core fill.
- (4) Solid block wall shall be surveyed by rebar detector to reveal presence of Dur-o-wall horizontal reinforcement.
- (5) Survey all masonry walls visually, and verify dimensional and configurational conformity to design.
- (6) Documentation of all instrument tests and surveys will be maintained.

5. (Continued)

IMPLEMENTATION:

Estimated date of completion is May 1, 1984.

GENERIC IMPLICATIONS:

Documentation has been or will be reviewed on safety-related installation. Missing or incomplete documentation requires reconstruction of missing records, if available, or reinspection to assure compliance to requirements, sample destructive testing or, in some cases, reconstruction.

6. PROGRAM OUTLINE FOR RESOLUTION OF FULL PENETRATION WELD RADIOGRAPHY
DISCREPANCY ON ASSOCIATED PIPING SUPPLIED MAIN STEAM PENETRATION NO. 1

OBJECTIVE: Establish the acceptability of the primary bellows to fluid head full penetration weld no. 3 on Main Steam Penetration No. 1.

PROBLEM

DESCRIPTION: In the interpretation of the NRC reviewer, weld no. 3 was not properly prepared for radiography in accordance with ASME requirements. As a results, the weld quality was considered questionable for a small portion of the total length of the weld.

DISCUSSION: Due to inaccessibility of the weld, it is not feasible to visually inspect the weld surface and re-radiograph. Therefore, an engineering evaluation is underway to establish the acceptability of the questionable areas.

An approximate total of 37 associated piping full penetration welds were reviewed during the recent NRC CAT Inspection. The above described weld was the only questionable item resulting from the review. Therefore, it is considered an isolated case. Further review of APE radiographs is not considered appropriate.

PROGRAM: The resolution is as follows:

- (1) Ebasco Materials Application and Mechanical Engineering are presently reviewing the finite element stress analysis performed by Associated Piping to establish the stress levels and direction of loading at the points in question.
- (2) Having established the physical nature of the questionable areas (i.e. root convexities) a review of the stress levels will determine the acceptability of the questionable areas.
- (3) If in the opinion of the design engineer the stress levels are sufficiently high, a fracture analysis will be performed to verify the acceptability of the weld.
- (4) Appropriate documentation will be prepared to justify the outcome of the engineering evaluation.

IMPLEMENTATION:

Estimated completion date is May 1, 1984.

GENERIC IMPLICATIONS:

The piping penetrations are the only items supplied by APE. Based on the 37 welds reviewed and the one "somewhat" questionable weld identified this is considered an isolated case having no generic implications.

7. EVALUATION OF CONSISTENCY BETWEEN THE ISOMETRICS & MECHANICAL PIPING

ORTHOGRAPHIC DRAWINGS

OBJECTIVE: To ensure that FCR's and DCN's are incorporated on Ebasco piping drawings and isometrics in a consistent manner.

PROBLEM DESCRIPTION: During the NRC "CAT" inspection, several minor discrepancies between isometrics and piping design drawings were found.

DISCUSSION: Questions were raised that the piping isometrics and not the piping orthographics, which gave the approved design documents, are used for field verification of the piping installation. The piping isometrics must accurately reflect the design orthographics in order to assure that the field installation is in accordance with the approved design.

PROGRAM: (1) To determine if there is a consistency problem between isometrics and piping drawings, a sample will be reviewed for consistency.

IMPLEMENTATION:

The program will be administered by ESSE Mechanical Engineering. Sample review for consistency will be completed by May 7, 1984.

GENERIC IMPLICATIONS:

The sample review being implemented within the corrective action program will determine if generic implications exist and further action as required.

8. PROGRAM OUTLINE FOR EVALUATION OF LIMITORQUE OPERATOR ORIENTATIONS

OBJECTIVE: Establish a level of confidence to ensure that safety class valves with Limitorque operators have been correctly installed.

PROBLEM DESCRIPTION: During the NRC "CAT" Inspection, it was found that one Limitorque operator had not been installed in accordance with design. Although this discrepancy was considered insignificant, the appropriate documentation was generated to resolve the issue.

DISCUSSION: The concern arising from the identified discrepancy involved gear lubricant leakage into the motor winding. If the orientation is such that leakage can occur, an operator seal must be installed.

PROGRAM: In order to review the concern, the following program will be implemented:

- (1) ESSE Mechanical will provide Ebasco QA with a list of safety class valves with Limitorque operators and acceptance criteria for orientation of Limitorque operators.
- (2) Ebasco QA will field survey the operator to identify deviations in orientation of Limitorque operators.
- (3) ESSE Mechanical will evaluate identified deviations for acceptability.
- (4) ESSE Mechanical is to issue DCN(s), if necessary, to revise drawings for as-built conditions.

IMPLEMENTATION:

This program will be administered by Ebasco QA. Estimated completion date is April 30, 1984.

GENERIC IMPLICATIONS:

Ebasco Engineering reviewed installation requirements of valving components to assure orientation requirements are established and met.

9. DESIGN CONTROL (DOCUMENT CONTROL) CAT CORRECTIVE ACTION

OBJECTIVE: The program objective outlined below is aimed at eliminating discrepancies in posting FCR's and DCN's on controlled drawings and eliminating the inconsistencies between the Document Control files and the Ebasco Drawing Closeout Schedule.

PROBLEM DESCRIPTION: The areas of concern relative to Document Control interface with the Design Control program have been identified as follows:

- (1) FCR/DCN posting discrepancies on controlled drawing for which individual control number holders had responsibility.
- (2) Controlled drawing stick files, for which individual control number holder had responsibility, that did not contain the latest revision of drawings.
- (3) Discrepancies between the Document Control drawing control cards and the ESSE Drawing Closeout Schedule relative to drawing revisions and unincorporated FCR/DCN's.

DISCUSSION: A joint Ebasco and LP&L program to reduce the total number of active control numbers receiving controlled drawings has been ongoing for some time. To date, this program has reduced the total number of control numbers receiving controlled drawings.

A comparison between the Document Control drawing control cards and the ESSE Drawing Closeout Schedule are presently being addressed under a program initiated between Document Control, ESSE, and Ebasco N.Y. This program involves the review of the Document Control control cards and the Drawing Closeout Schedule at the time of drawing revision to assure conformity.

PROGRAM: In response to the CAT audit findings, the two corrective action programs currently in effect will be consolidated and modified to expedite the completion of corrective action. The program modification and implementation timetables are as follows:

- (1) Ebasco will continue to reduce the number of controlled drawings. This reduction will be accomplished on or before April 15, 1984.
- (2) On April 16, 1984, Document Control will assume total responsibility for those control numbers who are still receiving controlled drawings. This includes the drawing stick files.

9. (Continued)

- (3) Beginning immediately, Document Control will take over the updating of the ESSE Drawing Closeout Schedule. On or before April 16, 1984, a complete review of the Closeout Schedule and the Document Control drawing control cards will be completed and the two documents reconciled. Document Control will be the only organization to add or to delete from the Drawing Closeout Schedule. Additions and/or deletions will simultaneously be made to both documents by the same clerk thus eliminating any chance of document discrepancy.

These actions will be taken by Ebasco with appropriate overview and interfaces with the LP&L Records & Administration.

IMPLEMENTATION:

Estimated date of completion - April 16, 1984

GENERIC IMPLICATIONS:

The action themselves are generic; the program is being changed.

10. PROGRAM OUTLINE FOR EVALUATION OF CONCERNS ADDRESSING MATERIAL TRACEABILITY

OBJECTIVE: To ensure that appropriate material traceability exists in compliance with ASME Code and Quality Program requirements.

PROBLEM

DESCRIPTION: During the NRC CAT Inspection, several discrepancies were identified regarding material traceability. Some items were of different material than that specified on the design drawings, some items were identified as having inconsistent markings, some items were not marked, and some items were not traceable to documentation.

DISCUSSION: (1) Per ASME and QA program requirements, bolting greater than 1" is to be purchased with CMTR's and traceable through installation. Of the items noted in the CAT inspection only the hold down bolting on the Safety Injection Tank and ring girder is greater than 1". All other bolting traceability items noted in the inspection applied to bolting less than 1".

ASME Section III and the QA program require only "Certificates of Compliance" for bolting 1" and less. Traceability through installation for this bolting is not required. Contractors performing installation or work on safety related components within Quality Assurance programs and procedures which controlled the purchasing and installation of safety related material for bolting requiring only a "C of C". No corrective action is required for traceability.

(2) The majority of the items noted with inconsistent markings related to manufacturer's markings, which are not required to be consistent. One set of nuts was identified as being inconsistent, but further field inspection has shown them to be marked identically.

(3) Four items were identified to be of different material than that specified on design drawings. These differences have been identified as either existing on the original equipment as furnished by the vendor, or as resulting from rework during start-up operations.

PROGRAM:

(1) The paint was removed from the Safety Injection Tank bolts and studs to determine the traceability markings. Ebasco Engineering has evaluated the markings and determined this to be no problem. No further action is required.

(2) The markings identified as inconsistent have been resolved as being either manufacturer marking differences or markings incorrectly recorded at the time of the CAT Audit. No corrective action is required.

10. (Continued)

- (3) Three of these four items are documented and resolved on DN-SQ-2349 and NCR-W3-7643. The remaining item is to be referred to the start-up maintenance organization for corrective action, via a potential problem report.

IMPLEMENTATION:

Estimated completion date - April 30, 1984.

GENERIC IMPLICATIONS:

Based on a Quality Deficiency Report issued by LP&L Nuclear Operations QA, a program was instituted to assure that flanges, valve bonnets, manways, etc., which were disassembled during testing, will be in compliance with requirement. Material (fasteners) will be verified, torqued and documented.

No further action warranted.

11. SUMMARY OF PEDEN STEEL SHOP WELDS

FINDINGS AND PROGRAM

OBJECTIVE: Evaluate the need for further investigation or corrective action regarding shop welds made by Peden Steel.

PROBLEM

DESCRIPTION: During the CAT Inspection the following actions were taken:

- (1) The NRC Inspector examined 40 shop welded structural steel connections made by Peden. Two were identified for engineering evaluation. Both were found acceptable.
- (2) Ebasco examined 240 connections and 13 required engineering evaluation. All were acceptable.

DISCUSSION:

With respect to welding, no problem requiring repair was identified in connections examined during the CAT Audit. Peden shop welding was performed under their shop QA/QC Program. Ebasco Vendor QA representatives inspected activities in the shop, and receiving inspections and QA records review at the site have established that complete, satisfactory quality documentation exists for Peden work.

Sixty-five pieces of small-bore pipe whip restraints were returned to Peden for repair in 1982, after certain weld defects were found. The welds called for by the design were difficult to make and not typical of the large, accessible welds found in structural work generally.

It is concluded, based on the record to date including the CAT Audit findings, that sufficient investigation into Peden Shop welding has been performed. The Peden Shop QA/QC program as carried out is sufficient assurance of the acceptability of the work. Nevertheless, a sample of shop welded connection will be examined to provide further confirmation.

PROGRAM:

An additional sample of 500 welded connections made by Peden Steel will be examined. The sample will be divided equally among structural steel framing for buildings, Electrical cable tray seismic supports and HVAC seismic supports.

The examination will be performed under ASP-IV-142 by Ebasco Materials Application Engineers.

IMPLEMENTATION:

Estimated completion date is May 1, 1984.

GENERIC IMPLICATIONS:

The program outlined is a result of reviewing for generic implications. Sample selected will ensure that Peden welds are adequate notwithstanding various contractors installing Peden supplied components.

12. PROGRAM OUTLINE FOR ELECTRICAL MAINTENANCE CONCERNS - ADDRESSED DURING
THE CAT INSPECTION

OBJECTIVE: Establish the acceptability of the Electrical Maintenance PM Procedures to provide good practices for care of MOTORS.

PROBLEM

DESCRIPTION: See attached summary and history of referenced audit findings.

DISCUSSION: Electrical Maintenance Procedure ME-4-703 provides for performing PMs on motors. Included as a part of the PM Program is a megger test if the motor has not been run within the last 30 days. During the period of 10/83 to 1/84 a conscious decision was made to not megger the motors, but this decision was not documented. This decision is not detrimental to the motors, and monthly meggering should not be advocated unless conditions warrant it.

Subsequent megger readings have been taken on these seven motors with satisfactory results. The readings give no indication of degradation of motor operability or dependability.

PROGRAM: The resolution is as follows:

- (1) ME-4-702 will be deleted and be replaced in full by ME-4-703.
- (2) ME-40703 will be revised to clarify the procedure with respect to the frequency for meggering and conditions for which meggering should not be performed.
- (3) Maintenance personnel in the Electrical Department will be counseled and trained on the appropriate methods for documenting the results of preventative maintenance to include these cases where maintenance is not performed/rescheduled.

IMPLEMENTATION:

The program outlined above is currently in progress.

GENERIC IMPLICATIONS:

A review of electrical maintenance procedures has been accomplished and revisions made within the program to gain added confidence. The maintenance program is being evaluated on an ongoing basis due to operating configurations histories being developed.

13. PROGRAM OUTLINE FOR FIRE DAMPER MALFUNCTIONS DURING CAT AUDIT

OBJECTIVE: Evaluate the need for investigation and/or corrective action regarding the malfunctions of fire dampers.

PROBLEM DESCRIPTION: During the CAT inspection, 8 fire dampers were tested to verify proper operation. 2 of the 8 dampers tested failed to close properly.

DISCUSSION: The LP&L Startup Engineer reinspected the "Airbalance" spring type failed damper and found that the gravity assist actuating spring had twisted from torque and the spring end caused binding. This torquing was apparently caused by improper and excessive manual releasing. Following realignment of the damper spring, it was tested and found to operate properly. Subsequently the damper has been returned to service. During the performance of the preoperational test, the startup engineer noted operating difficulties with the failed damper and a limited number of other dampers of this type prior to successfully passing the test. At that time, the problem was attributed to incorrect manual release of the dampers.

PROGRAM: The preoperational test results will be reviewed to identify all "Airbalance" spring type dampers that experienced operating difficulties. (Dampers not operating properly the first time during preop.) These dampers will be inspected, ensuring proper spring alignment, and retested to preoperation test requirements. Additionally, a letter is being issued to LP&L Operations, detailing the proper method of manually releasing the fire dampers. This letter will include a recommendation that the damper springs on all "Airbalance" spring type dampers be inspected as part of the preventative maintenance requirements every 18 months.

IMPLEMENTATION:

Estimated completion date - May 15, 1984

GENERIC IMPLICATIONS:

The Joint Test Group (JTG) reviews test procedures for abnormal operating characteristics exhibited by components during the testing program. The JTG has additionally directed the Startup Engineers to identify to the Operations staff any abnormal operating characteristics detected during the test program. Additional reviews of Phase II testing are accomplished in the JTG Comprehensive Review Program.

14.

A. ITEM

The question was raised by the CAT Inspector relative to QA involvement in the Area Walkdown Program.

RESPONSE:

Currently in addition to Ebasco Quality Assurance involvement there are eight LP&L Quality Assurance Representatives involved with the area walkdown. Their duties consist of surveillance of the on-going walkdown and performing audits of areas upon acceptable completion of Ebasco's area walkdown per LP&L Procedure.

B. ITEM

IEW PWHT charts on the "A" Stops (Piece 1-A2A-P1-E7-E-1)

- a) PWHT chart did not indicate the chart speed.
- b) Temp. on PWHT chart was 1050°F but the drawing required 1100°F.

RESPONSE:

- a) Ebasco has reviewed PWHT chart of Piece 1-A2A-P1-E&E-1 and have determined the time and temperature satisfies code requirements for material type.
- b) Applicable code requirements were met. Ebasco specified that the PWHT should remain 50°F below the material tempering temperature. The production weld was therefore PWHT at 1050°F and held at that temperature for 2 hours per inch of weld thickness. The W.P.S. to make this weld was qualified with the 1050°F PWHT for the required hold time.

The above statement complies with IEW original P.O. which required them to PWHT at 50°F below the tempering temperature which is 1100°F. This is why IEW also qualified with the 1050°F PWHT for the required hold time.

14. (Continued)

C. ITEM

Hold Tags - The requirement for a hold tag to be placed on material when an NCR was written was removed from the NCR Procedure (ASP-III-7) in 1983.

RESPONSE:

There are a total of 65 NCR's that were written without the initiation of a D.N. or E.D.N. Ebasco is in the process of reviewing these NCR's to determine the need to place hold tags on the nonconforming conditions.

ASP-III-7 was revised (issue K) on 3/7/84. Paragraph 5.7 requires that hold tags be placed and removed by Q.C.

Ebasco providing training on ASP-III-7, Issue K on 3/27-28/84. It is common practice that all affected personnel receive training on procedures as they are revised.

D. ITEM

DN's and EDN's are not upgraded to NCR's; ASP-III-7, Para. 6.2.1, requires an NCR be issued when Corrective Action requires an engineering change to drawings, specs, or procedures.
(i.e., FCR of DCN) (6 examples)

RESPONSE:

W3QA-27995 memo dated 3/26/84 was issued to all QAE's and Q.C. Supervisors, directing them to be more observant on the review of the contents of the Discrepancy Notices as well as the corrective action.

E. ITEM

NCR's not filled out correctly; ASP-III-7 attachment 7.1, pg. 3, #9 requires that the description state the requirement being violated. Several cases were found where this was not done.

RESPONSE

This concern was discussed and emphasized in the training sessions 3/27-28/84 to ASP-III-7.

14. (Continued)

RESPONSE (Continued)

LP&L Operations QA has recently reviewed Ebasco nonconformance reports. In their review, very few problems were noted concerning the lack of stating the requirement being violated. Based on their review, no further sampling is anticipated.

F. ITEM

ASP-III-7, Issue J, deleted from the body of the procedure the requirement for the QAE to complete Form #6009 (corrective action). Issue "K" put the requirement back in.

RESPONSE

Training of ASP-III-7 Issue K will address the need for QA to require corrective action to preclude recurrence as necessary. This is noted in Attachment 7.1, page 6 of 7 of ASP-III-7. Also form 7.3 to ASP-III-7 requires corrective action take to preclude recurrence, if the QA Engineer deems this action necessary.

Issue "G" thru "I" contained the Corrective Action Report Form No. 6009-11/2-82B. Issue "J" (dated 12-9-83) did not utilize this Corrective Action Report. Issue "K" - re-established the use of the Corrective Action Report (dated 3-7-84). This is not considered to be significant as the corrective action program was in effect during this period.

G. ITEM

Test for borrow material acceptability should have been performed prior to the placement and compaction.

RESPONSE

This commitment did not exist in the PSAR which was in effect between 1974 and 1978 when most of the work was performed. Borrow material was approved at the source (pit) by Mr. Temchin, the Site Soils Engineer, a highly qualified individual who represented design engineering. It was pump-dredged Batture Sand, very clean and uniform. The specification did not required the form be filled out prior to placement and only routine check tests were performed off the fill. Deficiency Notice SQ-2862 has been initiated to document the foregoing.

14. (Continued)

H. ITEM

The following type of problems were noted during the CAT inspection.

- A) Spacing on struts and snubbers
- B) Angularity on struts and snubbers
- C) Gaps on sliding fit U-bolts
- D) Interdisciplinary clearances
- E) Area walkdown scope/accountability with regard to pipe supports.
- F) Gaps on box guides
- G) Incorrect 4010 redlining for welding of end attachment.

RESPONSES

All personnel involved with pipe supports in the area walkdown have been indoctrinated with special emphasis put on items A thru D.

As for scope and accountability, (Item E) all supports checked will be individually documented and tracked.

Item F and G were evaluated by ESSE engineering in the cases identified by the CAT and were determined to be acceptable as is, also due to various other hanger walkdown programs which have been implemented in the past (LP&L walkdown, 7400 walkdown, Ebasco 208 hanger walkdown, FCR-MP-1553, and NCR-W3-2644) it is felt these cases noted are isolated. No additional action required.

I. ITEM

Cable to Cable Separation Problems in battery chargers.

RESPONSES

This item appears to be an isolated problem. Ebasco has written PPR 123 to identify this problem. ESSE recommends cables be reworked to meet proper separation criteria. Rework to be completed and QC inspected.

14. (Continued)

J. ITEM

Placements 499-S02-6 and 499-S02-13B have (2) misplaced pump summary sheets.

RESPONSE

The (2) discrepant pump summary sheets have been reconstructed utilizing various existing documents in the subject placement packages. Out of the 700 test documents reviewed we feel that these (2) two documents that were missing are isolated case. Since it has been shown that the missing documents can be reconstructed we feel that no further corrective action is required. The reconstruction of pump summaries are documented and can be found in placement packages.

K. ITEM

Two (2) GEO Lab Test Reports, document slump and air percentage used for placements 499-S04-1A3 and 1A4 which exceeded Specification tolerances; reference Batch Ticket Nos. 14631 and 14616.

RESPONSE

The (2) batch tickets identified did indeed exceed specification limits. The reasons GEO Test Lab identified these reports being acceptable was because they were instructed by Ebasco Engineering in writing that for the mix design used (AA-29) the increase in percentage of slump and air was acceptable. The actual discrepancy is that an FCR should have been generated by Ebasco Engineering in lieu of a letter directing the test lab to deviate from specification limits.

As of 3/29/84 this deviation has been properly identified by means of a Discrepancy Notice SA-2858 and corrective action initiated. It should be noted that the (2) discrepant entries represented a sampling of approximately 700 evaluated and we feel this was an isolated occurrence.

14. (Continued)

L. ITEM

NCR W3-6234 (Attachment V) did not have a revised test schedule for mechanical splices that took into consideration visual rejects.

RESPONSE

NCR W3-6234 (Attachment V) has been 100% re-evaluated to accurately include visual rejects in the selection of destructive test sampling. This review will be documented on a supplement NCR for Attachment V which will be completed and re-evaluated by Quality Assurance and Ebasco Engineering prior to April 6, 1984.

M. ITEM

QAIRG #1191 (Letter #) was generated to close all generic comments on 9.2 forms on hydro records. This letter did not reference all the referenced letter Nos. used by QAIRG to generate QAIRG #1191.

RESPONSE

QAIRG is writing a supplement to QAIRG #1191 (letter #) dated 2/1/84. QAIRG is reviewing 100% of the 9.2 comments in the hydro packages to assure that all the generic 9.2 comments are identified in the QAIRG-1191 supplemental letter. QAIRG will complete their 100% review by April 6, 1984.

N. ITEM

Tompkins Beckwith needed to write a letter of clarification on why hydro-walkdown sheets on retest are not in hydro packages.

RESPONSE

Tompkins Beckwith generated a letter of clarification on March 22, 1984 that explains the list of the hydro walkdown sheets. See attached letter on subject procedure TBP-36 "Hydrostatic/Pneumatic Testing."