

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 99900505/80-01

Program No. 51200

Company: EBASCO Services, Incorporated
Two World Trade Center
New York, New York 10048

Inspection at: New York, New York and Lyndhurst, New Jersey

Inspection
Conducted: April 21-25, 1980

Inspectors:

C. J. Costello
J. R. Costello, Principal Inspector
Program Evaluation Section
Vendor Inspection Branch

6-3-80
Date

J. M. Johnson
J. M. Johnson, Contractor Inspector
Program Evaluation Section
Vendor Inspection Branch

5/30/80
Date

Approved by:

C. J. Hale
C. J. Hale, Chief, Program Evaluation Section
Vendor Inspection Branch

6-3-80
Date

Summary

Inspection on April 21-25, 1980 (99900505/80-01)

Areas Inspected: Implementation of Topical Report No. ETR-1001 in the areas of design input, design document control, verification activities, action on previous inspection findings, and follow-up on regional requests. The inspection involved sixty-two (62) inspector-hours on-site by two (2) USNRC inspectors.

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Results: In the five (5) areas inspected, two (2) deviations were identified in one area. There was one unresolved item identified.

Deviations: Verification Activities: (1) Contrary to Ebasco Topical Report ETR-1001, suppliers have not been required in all cases to furnish a detailed fabrication sequence showing required tests and inspections (See Notice of Deviation, Item A). (2) Contrary to Ebasco Topical Report ETR-1001, on WNP 3/5 personnel other than the Project Quality Assurance Engineer are obtaining review and comments on procedures (See Notice of Deviation, Item B).

Unresolved Item: It is not clear whether the PSAR commitments to ANSI daughter standards and/or the Gray Book for two projects requires passing these commitments to vendors either by incorporation or reference in the purchase order, when applicable to the vendor scope of work. (See Details Section II, paragraph B.3.b.)

DETAILS SECTION I

(Prepared by J. R. Costello)

A. Persons Contacted

L. E. Ellison, Chief, Vendor Quality Assurance
C. B. Hickey, Assistant Engineer, Quality Assurance
T. P. Morales, Assistant Project Engineer WNP 3/5
T. J. Mormilo, Assistant Chief, Vendor Quality Assurance
*C. Murphy, Supervisor, Project Files
J. W. Phalen, Associate Engineer
*J. K. Tompeck, Project Quality Assurance Engineer WNP 3/5
*R. J. Vickers, Project Engineer WNP 3/5
R. H. Wang, Supervising Engineer

*Denotes those present at exit meeting.

B. Action on Previous Inspection Findings

(Closed) Deviation (Report 77-03): A significant number of Q designated project documents had not as yet reached the duplicate controlled file. The inspector verified that the file is now up-to-date and will be periodically updated in the future.

C. Verification Activities1. Objectives

The objectives of this area of the inspection were to verify that procedures have been established and implemented for verification activities that provide for:

- a. Qualified personnel to be assigned to check, inspect, audit or witness the activities of suppliers as early as applicable.
- b. The planning of verification activities including identification of the inspection sequence, hold and witness points, acceptance criteria, documentation required by the procurement document, and receiving inspection plans.
- c. Implementing source surveillance including activities at supplier's facilities (i.e., inspections, audits) and receiving inspection dispositioning (i.e., accept, reject, hold).
- d. Measuring and test equipment including requirements for selection for accuracy and control sufficient to determine conformation to specified requirements and calibration and

control to recognized standards to determine validity of inspection and test results.

- e. Reporting results of source surveillance activities and evaluation of reports.

2. Method of Accomplishment

The preceding objectives were accomplished by an examination of:

- a. Nuclear Quality Assurance Program Manual ETR-1001, Revision 8, procedures QA-I-5, Revision 1, QA-II-3, Revision 0, QA-II-4, Revision 1, QA-II-5, Revision 1, and QA-II-5, Revision 1.
- b. Quality Assurance Manual Nuclear Power Stations for WPPSS Nuclear Projects 3 & 5, procedures QC-5, Revision R0, QC-51, Revision R0, QC-5.2, Revision R0, and QC-5.3, Revision R0.
- c. Vendor Quality Assurance Department procedures, VQAD-3, Revision 1, VQAD-8, Revision 2, VQAD-9, Revision 1, and VQAD-13. Revision 1.
- d. Quality Assurance Procedures, QA-P.5.1, Revision 2, QA-P.5, Revision 2, and QA-P.9, Revision 1.
- e. Documents to verify implementation of quality assurance program commitments, procedural and project guide requirements, and to satisfy the intent of the objectives section. These documents are as follows:
 - (1) Purchase Order No. 3240-21 to Valtech Incorporated; Springfield, Utah, for control valves and accessories.
 - (a) Quality Assurance Plan, June 25, 1979.
 - (b) Contract Document Requirement Listings.
 - (c) Nineteen (19) Vendor Quality Assurance Reports dating from May 17, 1979 until April 2, 1980.
 - (2) Purchase Order No. 3240.26 to PX Engineering Company; Woburn, Massachusetts, for miscellaneous heat exchangers.
 - (a) Quality Assurance Plan, December 28, 1977.
 - (b) Supplier Records/Documentation Checklist November 12, 1979.

- (c) Six (6) Contract Waiver Requests dating from December 16, 1976 until August 25, 1978.
 - (d) Three (3) Vendor Quality Compliance Reports (Release for Shipment) dating from November 6, 1979 until January 2, 1980.
 - (e) Fifteen (15) Vendor Quality Assurance Reports dating from May 8, 1979 until January 31, 1980.
- (3) Purchase Order No. 3240-54 to Nissho-Iwai American Corporation for mechanical containment penetration. This contract was sublet to Western Piping and Engineering, San Francisco, California.
- (a) Quality Assurance Plan, January 10, 1978.
 - (b) Two Vendor Quality Compliance Reports dated January 31, 1980, and February 29, 1980.
 - (c) Contract for containment piping penetrations between Western Piping and Engineering Company Inc. and Ishikawajima - Harima Heavy Industries Co., Ltd. dated May 1979.
- (4) Purchase Order No. 3240-90 to Dresser Industries Inc., Industrial Valve and Instrument Co. Alexandria, Louisiana for main steam line safety-valves.
- (a) Quality Assurance Plan, October 27, 1977.
 - (b) Supplier Records/Documentation Checklist, October 27, 1977.
 - (c) Supplier Procedure Checklist, October 27, 1977.
 - (d) Five (5) Vendor Quality Assurance Reports dating from February 15, 1978, until March 31, 1980.
 - (e) One (1) Contract Waiver Request dated January 28, 1980.
- (5) Purchase Order No. 3240-141 to S & Q Corporation; San Francisco, California, for hydrogen analyzer for containment.
- (a) Two (2) Contractor Waiver Requests dated February 27, 1978, and May 3, 1978.

- (b) Bidding Documents and Plans and Specification for Hydrogen Analyzer for Containment Specification No. 3240-141.
 - (c) Speed letter dated April 17, 1980, stating no QA Plan has been prepared as contract is now on back burner.
- (6) Purchase Order No. 3240-213 to Chicago Bridge and Iron; Birmingham, Alabama and Salt Lake City, Utah; for steel containment vessel.
- (a) Quality Assurance Plan, February 17, 1977.
 - (b) Supplier Records/Documentation Checklist, February 17, 1977.
 - (c) Supplier Procedure Checklist, April 2, 1976.
 - (d) Four (4) Contract Waiver Requests dating from February 27, 1978, until September 18, 1978.
 - (e) Eighty (80) Vendor Quality Assurance Reports covering the Salt Lake facility dating from April 12, 1978, until April 1, 1980.
 - (f) Seventy-five (75) Vendor Quality Assurance Reports covering Birmingham facility dating from December 21, 1978, until March 25, 1980.
- (7) Purchase Order No. 3240-116H to Haywood Tyler Pump Company; Burlington, Vermont, for miscellaneous pumps and accessories.
- (8) Purchase Order No. 3240-53 to Fairbanks Morse Engine Division of Colt Industries; Beloit, Wisconsin for diesel engine generator unit and control panel.
- (9) Purchase Order No. 3240-39A to Contromatics Company East, Hartford, Connecticut for butterfly valves nuclear 24" and under.
- (10) Purchase Order No. 3240-69 to American Warning and Ventilating Inc., Toledo, Ohio for HVAC dampers and louvers.
- (11) Purchase Order No. 3240-48 to Westinghouse Electric; East; Pittsburgh, Pennsylvania for 13.8 kv and 4.16 kv switch-gear and bus ducts.

- (12) Inspection Plan for Power & Control Cable, P. O. No. 3240-62A, Okonite Company prepared April 10, 1980.
- (13) Inspection Plan for Local Instrument Racks, P. O. No. 3240-58, Mercury Company prepared July 16, 1979.
- (14) Inspection Plan for Static Uninterruptible Power Supply, P. O. No. 3240-52, Elgar Corporation, prepared April 10, 1980.
- (15) Audits of Vendor QA Representatives
 - (a) Audit of Technical Performance and Procedural Requirements. Audit conducted on March 5, 1980, at Beloit Power; Beloit, Wisconsin.
 - (b) Audit of Procedural Requirements. Audit conducted on March 6, 1980, at Xomex Cincinnati, Ohio.
 - (c) Audit of Procedural Requirements. Audit conducted at Nuclear Valve Corporation; Van Nuys, California.
- (16) Specification Ebasco 860-W For Quality Class I activities, Revision 2, January 1977 entitled "Contractor Quality Assurance Requirements for Washington Public Power Supply System."

3. Findings

a. Deviations

See Notice of Deviation, Items A and B.

b. Unresolved Items

None

D. Follow-up on Regional Requests

This area of inspection covered a regional follow-up request regarding a 10 CFR 50.55(e) deficiency report relating to a possible understatement of the maximum temperature gradient in the spent fuel pool walls. In reviewing this reported deficiency, the inspector assured that the following objectives were accomplished:

1. Objectives

- a. Determination of how the item was identified.
- b. Assurance that follow-up actions were conducted under the requirements and procedures of the Ebasco Quality Assurance Program.
- c. Determination of the status of corrective action and preventive action to assure that the item was satisfactorily resolved.
- d. Determination of the generic effects on other plants.

2. Method of Accomplishment

The preceding objectives were accomplished by examination of the following documents:

- a. Regulatory Guide 1.13, Spent Fuel Storage Facility Design Basis, Revision 1, December 1975.
- b. Section 9.1.3.3 of the WNP 3/5 PSAR.
- c. Letters and memorandum as follows:
 - (1) R. H. Wang/V. F. Damato to J. Fox, November 19, 1979;
Subject: Temperature Gradient Curves For Fuel Pool Walls.
 - (2) R. H. Wang/V. F. Damato to J. Fox, November 21, 1979;
Subject: Temperature Gradient Curves For Fuel Pool Walls and Slab.
 - (3) J. Porrovecchio to R. T. Vickers, December 11, 1979;
Subject: Spent Fuel Pool Temperature Post LOCA.
 - (4) R. H. Wang/V. F. Damato to R. T. Vickers, December 13, 1979;
Subject: Thermal Design For Fuel Pool Walls.
 - (5) S. Chang/J. Fox to R. H. Wang/V. J. Damato, December 17, 1979;
Subject: Temperature Gradient Curves For Fuel Pool Walls.
 - (6) V. Macek to J. Fox, December 18, 1979; Subject: Spent Fuel Pool Temperature Post LOCA.
 - (7) R. H. Wang to D. L. Quamme/J. P. Sluka, January 17, 1980;
Subject: RHB Walls

- (8) A. M. Cutrona to J. Porrovecchio/J. Tompeck, January 24, 1980; Subject: Deviation/Noncompliance Report No. 010, Addition of Reinforcing Steel per DCN-CH-75.
- (9) R. H. Wang/V. F. Damato to J. Porrovecchio/J. K. Tompeck; February 4, 1980; Subject: Deviation/Noncompliance Report No. 10, Addition of Reinforcing Steel per DCN-CH-75 (Control 263) For WNP-385.
- (10) J. Porrovecchio to J. K. Tompeck/A. M. Cutrona, February 5, 1980; Subject: Deviation/Noncompliance Evaluation (Form 1352) No. 010.

3. Findings

- a. The inadvertent omission of reinforcement by the construction contractor in the FHB (Fuel Handling Building) placement necessitated the review of the RAB (Reactor Auxiliary Building) FHB design calculations.
- b. The design basis used in the original RAB/FHB analysis was adequate and conservative for the postulated accident condition coupled with abnormal load conditions as described in WNP 3/5 PSAR Section 9.1.3.3.
- c. After restudying the problem as a result of the omission of reinforcement by the construction contractor, Ebasco felt it prudent to implement some design modifications as a result of the following assumptions in their re-analysis.
 - (1) Isolation of the non-essential header for up to 30 hours to account for operator inaction (A lesson learned from TMI).
 - (2) Spent Fuel Pool Water assumed to reach an average temperature of 232°F based on the 40 foot hydrostatic pressure head. This conservative temperature was used despite an Ebasco Applied Physics/Nuclear Licensing position that nucleate boiling and natural circulation will maintain pool temperature at or below 212°F near the pool liner concrete boundaries.

- (3) Spent fuel pool water would reach a temperature of 232^oF in 11 hours following a postulated accident.
 - (4) HVAC room temperature controls would be inoperative following a postulated accident.
 - (5) No advantages would be taken for any cooling coming from the makeup water used to replace evaporated pool water.
 - (6) Use of thermal transient curves generated by Applied Physics for both winter and summer conditions.
- d. As a result of the reanalysis utilizing the assumptions listed above. It was shown that additional reinforcement would be required to compensate for increasing inplane shear stresses induced by the additional assumed thermal loads.
 - e. The design changes resulting from the reanalysis were incorporated into the design in light of the insignificant cost of a "Hold" on certain placements compared to the safety considerations and potential cost savings which could result from future inquiries and possible retrofit action.
 - f. Ebasco's civil engineering group concluded that the possible understatement of the maximum temperature gradient in the spent fuel pool walls was neither "reportable" nor "significant."
 - g. The inspector concluded that this item is not generic unless the original design parameters specified in the PSAR are to be changed.
 - h. In this area of inspection, no deviations from commitment or unresolved items were identified.

E. Exit Meeting

A meeting was conducted with management representatives at the conclusion of the inspection on April 25, 1980. In addition to the individuals indicated by an asterisk in paragraph A. of the Details Sections, those in attendance were:

B. R. Mazo, Chief Quality Assurance Engineer
B. E. Tenzer, Director, Materials Engineering and Quality Assurance
R. F. Williams, Supervising Quality Assurance Engineer.

The inspector summarized the scope and findings of the inspection for those present at the meeting. Management representative acknowledged the statements of the inspector.

DETAILS SECTION II

(Prepared by J. M. Johnson)

A. Persons Contacted

- G. Betancourt, Piping Engineer
- R. Bucci, Lead Electrical Engineer
- G. Caesar, Supervisor, Document Control (Standards and Procedures)
- G. Chen, NSSS Engineer
- *T. A. Cotter, Internal Audit Group Leader
- J. Diurno, Assistant Project Engineer (WPPSS)
- R. Gaudio, Lead Systems Engineer
- J. Klein, Lead Engineer, Valves
- J. Northshield, Supervising Engineer, Standards and Procedures
- P. Panchal, QA Engineer
- J. Phalen, QA Engineer (Internal Auditor)
- J. Porrovecchio, Licensing Engineer (WPPSS)
- B. Schaumbach, Piping Engineer
- *S. Sparacino, QA Engineering Supervisor
- *J. Tompeck, Project QA Engineer (WPPSS)
- R. Weronick, Supervising Electrical Engineer
- *R. T. Vickers, Project Engineer (WPPSS)

*Denotes those present at exit meeting.

B. Design Inputs1. Objectives

The objectives of this area of the inspection were to determine that:

- a. Procedures have been established and are being implemented that prescribe the system for control of those criteria, parameters, bases, or other design requirements upon which detailed final design is based.
- b. Design inputs are specified on a timely basis, their selection reviewed and approved, incorporated into the design documents, and changes in input are justified, reviewed, and approved.
- c. Commitments are properly translated into design inputs, as applicable to the following:
 - (1) Basic functions
 - (2) Performance requirements

- (3) Regulatory requirements, codes, and standards
 - (4) Design conditions
 - (5) Loads
 - (6) Environmental conditions.
- d. Design requirements are specified, when applicable, relating to interfaces, materials, mechanical, structural, hydraulic, chemistry, electrical, instrumentation and control, redundancy, accessibility, fire protection, and other requirements that prevent undue risk to the health and safety of the public.

2. Method of Accomplishment

The preceding objectives were accomplished by an examination of:

- a. Ebasco Topical Report No. ETR-1001 (including modifications for the WPPSS Nuclear Projects 3 and 5) and the respective Preliminary Safety Analysis Reports (PSAR) for:
- (1) Carolina Power and Light (Shearon Harris), Sections 1.8, 8.4.8(k), 1.89 and 1.63; and Chapter 9.
 - (2) WPPSS Nuclear Projects Nos. 3 and 5, Sections 17.1, 17.2, 3.3.1.1, 3.11, 4.5.9, 3.11.2, 6.3.2.1 and Figures 6.3.1A and B, and Table 6-31.

These were examined to determine QA program commitments and certain specific design commitments for each project during applicable time periods.

- b. Ebasco Nuclear QA Manual for WPPSS, Procedures QC-4 to determine procedural requirements for the WPPSS project. (Note that a similar projectized QC-4 was applicable to Shearon Harris.)
- c. Ebasco Engineering Procedure Manual, procedures nos. E-77 (Selection, Identification and Documentation of Design Inputs), E-9 (Processing Conceptual Design Documents for Review and Approval), E-52 (Coordination of NSSS Interfaces), E-50 (Guidelines for the Acceptance of Equipment to Withstand Nuclear Radiation) and E-76 (Guidelines for Design Verification) to determine procedural requirements.
- d. Design input and output documents for Safety Injection System, especially High Pressure Safety Injection (HPSI) and Low Pressure Safety Injection (LPSI) for which design and scope of supply are interface activities by Ebasco and CE (Combustion Engineering):

- (1) NSSS Interface Requirements for the Safety Injection System, Revision 2, dated September 27, 1977. (Certain requirements listed were checked against PSAR requirements).
- (2) Ebasco Design Criteria for Specification No. 4 (Piping and Piping Supports) which was reviewed and approved 4/14/75. The specification criteria document was checked against the PSAR for certain specific requirements, including PSAR Table 6-31.
- (3) Ebasco Orthographic Drawing of the Safety Injection System (Drawing No. G-1073, Revisions 3 and 4) were checked against CE Piping and Instrumentation Diagram of the Safety Injection System, (Flow diagram no. E-SYS-80-310-131, Revision 5). Note that Ebasco adds details to the CE design drawing such as identification of valve scope of supply, addition of drain and vent valves, and specifics such as exact location of change from Class I to Class II piping.
- (4) Ebasco drawings nos. G-1077, G-1036 (sheet 8), G-1301 (sheets 2 and 3) and G-1306.
- (5) Contract no. 3240-4 (Purchase Order 4081), Technical Specification Section 2A, was inspected for pipe schedule, materials, temperature and design pressure in conformance with Design Criteria Document, Orthographic Drawing and PSAR commitments, as applicable. Also checked were imposition of Regulatory Guide 1.44 (imposed in section 6.02.a.iii), and imposition of Ebasco welding specifications called out in the Criteria Document. QA attachment 860-W, Revision 1, dated 1975 was invoked.
- (6) Selected sections of Contract no. 3240-43E for valves were examined and compared with the applicable Ebasco Valve List (Revision dated 2/8/80) for WPPSS, and the Ebasco specification Design Criteria document for valves 2" and smaller.
- (8) Ebasco Valve List information was cross-checked for valves numbers SI 1948B and SI 1955B with valve 606 in CE drawing E-SYS-80-311-131, Revision 5. Material (stainless), pressure, temperature, operation of valve (solenoid), seismic class I, classification as active or non-active, valve type (globe) and size of connection (40s) were examined.
- (9) Calculation dated 7/21/76 to determine pipe schedules for Safety Injection System piping (calculation by E. Chen) was checked against Ebasco orthographic drawing and CE design document No. 8973-PE-VR3 (giving certain valve design requirements).

- (10) Valve specification 3240-43E technical requirements imposed were cross-checked against PSAR commitments and Design Criteria document for: environmental conditions including radiation resistance, limiting halogens, imposition of identified IEEE standards and of ASME Code (applicable year, addenda and sections) and SNT-TC-1A. Standard QA attachment 860-W, Revision 2, dated January, 1977 was imposed.
- e. Ebasco Design Criteria Document (Specification Criteria Sheet issued 4/15/75) for the Main Steam Safety Relief Valves, Contract No. 3240-90 dated 4/15/75 and the Specification Criteria Sheet were cross-checked against the Ebasco Valve List data and CE criteria document no. SYS-80-PE-IR-15 which supplies certain design information such as Seismic Class, Active or Non-active valve, etc.
- (1) Specification 3240-90, Technical Sections were inspected for inclusion of the above, invocation of appropriate ASME code edition, addenda, and sections, SNT-TC-1A, and appropriate ASTM standards and ANSI standards. QA Attachment 860-W, Revision 1 dated September, 1975 was invoked.
- (2) Ebasco Valve and Specialities List was cross-checked for these 8 valves against CE drawings E-SYS-80-310-115 and CE Valve Design Requirement document no. 08973-PE-VR15, Revision 1 (Main Steam and Feed Water Systems) for pressure, temperature, ANSI rating, Seismic class, Code Class, Failure Mode, Location, and designation of Active or Non-Active.
- f. Preliminary Safety Analysis Report Change Requests numbers 050, 083, and 087 and associated documents were reviewed for changes to WPPSS QA program commitments (Engineering Procedure E45 and Licensing Department Instruction L-3 provide requirements for processing SAR change requests).
- g. Documents related to design input requirements for CAR-SH-E-15 for Special Cables for Shearon Harris (Purchase Order no. NY435264):
- (1) PSAR section 8.4.8k and Chapter 9, Electrical Systems and Ebasco Electrical Design Criteria document dated 7/31/75 for Shearon Harris.
- (2) Technical Sections of the specification to assure incorporation of appropriate industry and Ebasco standards (IEEE, ASTM, UL, Regulatory Guides such as 1.38 and environmental requirements including radiation resistance).
- (3) Ebasco Standard QA attachment no. 860-75 was invoked.

- h. Documents related to design input requirements for Containment Electrical Penetrations (Specification no. CAR-SH-E-28, Purchase Order no. NY435144).
 - (1) Specification CAR-SH-E-28 requirements were reviewed against PSAR commitments for imposition of appropriate IEEE and ASTM standards, Regulatory Guides (1.38 and 1.63), NEPA 70, and environmental requirements including radiation resistance.
 - (2) Standard Ebasco QA attachment 860, revision 0 was imposed.
- i. QA requirements of Standard QA attachments 860-W-Revision 1 (1975), 860-W, Revision 2 (1977); 860-Revision 0, and 860-75, Revision 1 (1977) respectively were examined for inclusion of applicable ANSI documents, or the Gray Book or incorporation of appropriate requirements from these documents.

3. Findings

a. Deviations

In this area of the inspection, no deviations were identified.

b. Unresolved Items

In this area of the inspection, one unresolved item was identified as follows:

Section 17.2.2 of the WPPSS 3 and 5 Preliminary Safety Analysis Report (PSAR) commits Ebasco to following the Gray Book guidance, and additional sections require QA review of procurement documents to assure inclusion of applicable requirements. In the procurements for the Main Steam Safety Relief Valves (Contract 3240-90) and Piping (including Nuclear) (Contract 3240-4), both issued after the PSAR commitment to the Gray Book, the applicable Gray Book or ANSI N45.2.9, N45.2.11, N45.2.12 and N45.2.13 "how to" requirements/guidance were not passed on to the vendors by incorporation or reference. 10 CFR 50, Appendix B and ANSI N45.2 and ANSI N45.2.2 were invoked, however. Similarly, Section 1.8 and 1.8.2 of the Shearon Harris PSAR states that the Ebasco QA program is "structured in accordance with 10 CFR 50, Appendix B, ANSI N45.2, N45.2.9, N45.2.11, N45.2.12, and N45.2.13 and the Gray Book," and that Ebasco is responsible for passing on QA program requirements to subsuppliers. However, the procurement for Containment Electrical Penetrations (P.O. NY-435144) which was issued after the date of this PSAR commitment, does not invoke applicable portions of ANSI N45.2.9, N45.2.11, N45.2.12, N45.2.13 and/or the applicable sections of the Gray Book either by incorporation or reference. 10 CFR 50, Appendix B and ANSI N45.2.2 were invoked, and ANSI N45.2 summarized.

It was noted that this practice appears to be related to the time-frame of the procurement, in that recent procurements for both projects have passed on the applicable daughter standards and Gray Book requirements to vendors.

Related to applicability of N45.2.11 to the specific procurements for the Main Steam Safety Relief Valves and the Containment Electrical Penetrations, design responsibility to meet specified parameters is given to the vendor. In the Nuclear Piping specification, some design responsibility is given to the vendor, although basic system design is delineated in the Ebasco technical specification and drawings which are included in the procurement documents.

This item will be referred to NRC:HQs for their review and evaluation to determine whether the referenced PSAR commitments require passing on applicable sections of the daughter standards to vendors, or whether passing on 10 CFR 50, Appendix B and/or ANSI N45.2 requirements applicable to vendors is sufficient.

c. Followup Items

- (1) During the inspection, it was observed that Ebasco Valve and Specialties List for WPPSS shows the 8 Main Steam Safety Relief Valves as non-active, in contrast to CE document SYS80-PE-IR15, Revision 4, section 4.1.1.4.9 which states:

"Credit is taken for the Main Steam Safety Relief Valves in the SAR. Therefore, these valves are classified as active and shall conform to the design requirements of Regulatory Guide 1.48."

This item was not identified as a deviation because the technical specification 3240-90 and purchase order correctly identify the valves as active and impose R.G.1.48. However, it will be determined during a subsequent inspection whether this error on the valve list has had any effect on interface design activities at Ebasco. Ebasco stated they will correct this error on the valve list at its next issue (quarterly revision).

- (2) Examination will be made during a subsequent inspection of:
- (a) Status and final disposition of PSAR Change Requests nos. 83 and 84 for WPPSS which indicate adoption of a new QA program to replace ETR-1001 (which was adopted on PSAR Change Request no. 50) and the original QA program described in the PSAR.

- (b) New QA attachment to purchase orders to be used for WPPSS instead of Standard QA attachment 860.

(3) Future examination will determine:

- (a) Why procedure E-77 (prior E57) titled "Selection, Identification and Documentation of Design Inputs" is not listed in the Topical as a quality-affecting implementing procedure.
- (b) Why procedure E-77 doesn't reference E-52 "Coordination of NSSS Interfaces" or list Codes, Standards and Regulatory Requirements (including applicable issue and/or Addenda) per ANSI N45.2.11, Section 3.2.

d. Comments:

During the course of the inspection, it was noticed that the design temperature for the HPSI pumps (and system) is listed in the PSAR for WPPSS as 400°F. However, both CE and Ebasco design criteria documents and Ebasco technical specification show it as 350°F. The inspector was informed that this is a CE design change, and shown the CE P&ID which indicates 350°F and CESSAR F which also shows 350°. Therefore, this change is reflected in Ebasco piping and valve criteria documents and in the technical specifications and drawings and valve lists, etc.

C. Design Document Control

1. Objectives

To determine that approved procedures have been established and are being implemented for the control and distribution of design documents that provide for:

- a. Identification of personnel positions or organizations responsible for preparing, reviewing, approving, and issuing design documents.
- b. Identification of the proper documents to be used in performing the design.
- c. Coordination and control of design (internal and external) interface documents.
- d. Ascertaining that proper documents, and revisions thereto, are accessible and are being used.
- e. Establishing distribution lists which are updated and maintained current.

2. Method of Accomplishment

The preceding objectives were accomplished by an examination of:

- a. Ebasco Topical Report No. ETR-1001 (including modifications for the WPPSS Nuclear Projects 3 and 5) and the respective Preliminary Safety Analysis Reports (PSAR) for:

- (1) Carolina Power and Light (Shearon-Harris), Section 1.8.
- (2) WPPSS Nuclear Projects Nos. 3 and 5, Section 17.2.

These were examined to determine QA program commitments for each project during applicable time periods.

- b. Ebasco Nuclear QA Manual for WPPSS, Procedure QC-4 to determine procedural requirements for the WPPSS project (Note also that a similar projectized QC-4 was applicable to Shearon-Harris).
- c. Ebasco Engineering Procedures Manual, Procedures nos. E-65 (Control of Project-Related Design Documents), E-21 (Processing Project Equipment Specifications for Review and Approval), E-9 (Processing Conceptual Design Documents for Review and Approval) and E-30 (Preparation of Calculations), and E-52 (Coordination of NSSS Interfaces) to determine procedural requirements.
- d. Drawing Closeout Schedule List for WPPSS 3 and 5 projects, dated April 1980, was checked for proper identification of current revisions of the following Ebasco drawings:
- G-1061, Revision 5, sheets 1 and 2 (Flow Diagram of Main and Extraction Steam); G-1306, sheet 2 of 10, Revision 2; G-1073, sheets 1 and 2, Revision 4 (Flow Diagram (Orthographic) of Safety Injection System); G-1077, Revision 2, (Flow Diagram of Reactor Coolant System).
- e. Ebasco Equipment Specification and Procurement Schedule Report for WPPSS dated 3/31/80 was checked for inclusion of specifications 3240-4, 3240-43E, and 3240-90.
- f. CE letter dated 10/22/79 acknowledging receipt and acceptability of Ebasco drawing G-1073, Revision 4, and Ebasco O.K. to release to contractor dated 4/8/80.
- g. Examination of Ebasco review and approvals of Specification Criteria for 3240-4, 3240-43E and 3240-90.

- h. Examination of Ebasco review and approvals of original issues and later revisions of the following drawings: G-130 S (sheet 2 of 10, Revisions 0, 1 and 2; G-1077 (8/4/75), Revision 1 (1/4/77), Revision 2 (1/16/79); G-1073 (4/22/75), Revision 3 (12/29/77), Revision 4 (7/5/79).
 - i. Stick files for G-1301 and G-1077 from RAB (Reactor Auxiliary Building) and RB (Reactor Building) to assure current revision in use.
 - j. Valve and Accessory List issuance and distribution quarterly.
 - k. Examination of design Criteria documents for 3240-4, 3240-43A, 3240-90, and CAR-SH-E-15 to assure identification of design documents and standards required to be incorporated in final design.
3. Findings
- a. In this area of the inspection, no deviations and no unresolved items were identified.