

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of)	
)	
CAROLINA POWER AND LIGHT)	Docket No. 50-400-LA
COMPANY)	
(Shearon Harris Nuclear Power Plant))	ASLBP No. 99-762-02-LA

AFFIDAVIT OF DAVID L. SHOCKLEY

CITY OF NEW HILL)
) ss:
STATE OF NORTH CAROLINA)

I, David L. Shockley, being sworn, do on oath depose and say:

1. I am a resident of the State of North Carolina. I am employed by Carolina Power & Light Company ("CP&L") and work at CP&L's Harris Nuclear Power Plant in the Configuration Management subunit. My business address is 5413 Shearon Harris Road, New Hill, North Carolina, 27562.

2. I have been employed at the Harris Nuclear Plant for the past 20 years. I started working at the Harris Nuclear Plant in Corporate Quality Assurance in 1979. My job responsibilities in that organization from 1979 to 1990 ranged from performing mechanical inspections/tests of installed components; writing Quality Assurance ("QA") procedures governing , inspection and testing of installed components; developing and implementing the American Society of

Mechanical Engineers ("ASME") N-Stamp program and supporting procedures and databases; and finally in QA Engineering reviewing plant modifications ensuring QA Program requirements had been satisfied. From 1990 to 1994, I worked as the Supervisor of Modification Support Services, and from 1994 to 1996, I worked as the Supervisor of Engineering Services. Since 1996, I have been the Supervisor of Configuration Management at the Harris Nuclear Plant. In that position I am responsible for design document maintenance, the Equipment Data Base System Program and the Vendor Manual Program.

3. The purpose of this affidavit is first to describe briefly CP&L's QA Program and the implementation of the ASME N-Stamp Program during Harris construction, particularly as it applied to the installation of ASME Section III, Class 3 stainless steel piping. I also confirm from personal knowledge the acceptability of certain field welds on the Spent Fuel Pool Cooling and Cleanup System ("SFPPCS") piping constructed for Spent Fuel Pools C and D.

4. The basis for the overall QA Program used by CP&L for the design and construction of the Harris Plant is described in the Harris Preliminary Safety Analysis Report ("PSAR"). PSAR Section 1.8 states that "The Carolina Power & Light Company Quality Assurance Program for the engineering and construction of the Shearon Harris Nuclear Power Plant, which includes the quality assurance programs for both Ebasco and Westinghouse by reference, is structured with regard to safety-related equipment in accordance with the eighteen criteria of Appendix B to 10CFR50. In addition, the subject Program is structured in accordance with ANSI N45.2 and thereby AEC Regulatory Guide 1.28." The PSAR further states that the "Shearon Harris Nuclear Power Plant Quality Assurance Plan" was replaced by the "CP&L Corporate Quality

Assurance Program" on April 1, 1974, and provides a cross reference on how the subject plan met the criteria of 10CFR50 Appendix B

5. Certain aspects of Harris Plant construction were subject to QA requirements beyond those outlined in the CP&L Corporate QA Manual. Since CP&L was not only the owner, but also the constructor, installer and a fabricator of ASME Code items for the Harris Plant, an additional set of QA requirements was developed, reviewed, approved and implemented specifically to obtain the required ASME Certificates of Authorization and N-Stamp required for construction of pressure boundaries in a nuclear power plant. For construction of the Harris Plant, CP&L developed and implemented its "ASME Quality Assurance Manual" which was reviewed and approved by the ASME. CP&L's ASME Quality Assurance Manual is Attachment A to this Affidavit.

6. It is important to note that, while the CP&L ASME Quality Assurance Manual may have shared certain common facilities, procedures, and personnel with the overall site QA program, it did not rely on the latter program to demonstrate compliance with ASME Code requirements, which may be referred to hereafter as "Code". CP&L's ASME QA Program was subjected to ASME triennial audits in order for CP&L to maintain its N-stamp.

7. As part of the N-Stamp Program, an independent Authorized Nuclear Inspector ("ANI") was on site daily representing the nuclear insurer to provide an independent verification that the CP&L ASME QA Program was properly implemented. The ANI reviewed all ASME related work packages, routinely monitored field installation activities, performed field inspections, witnessed testing, verified resolution of field discrepancies and nonconformances, and

conducted a final review and certification process (referred to as the N-5 Data Report) for each affected system within ASME Code boundaries. The ANI's certification of the N-5 Data Report independently signified that ASME Section III requirements had been fully satisfied for the system.

8. The process and procedure measures for assuring the quality of the installation of ASME Section III, Class 3 piping, such as the SFPCCS stainless steel piping, can be summarized by reference to the relevant Harris Plant procedures, as follows:

- Work Procedure ("WP")-102, "Installation of Safety Related Piping" and other procedures established specific requirements for the installation of piping and weld documentation, including:

(a) The weld procedures utilized were qualified in accordance with Metallurgical Procedure ("MP")-01, "Qualification of Welding Procedures;"

(b) The welders and welding operators were trained and qualified in accordance with MP-02, "Procedure for Qualifying Welders and Welding Operators;"

(c) The QA inspectors were trained and qualified in accordance with Corporate Quality Assurance ("CQA") -1, Personnel Training and Qualification ; (Note: For the purpose of this document, QA and QC are considered synonymous and may be used interchangeably)

(d) The welds were stamped in accordance with MP-05, "Stamping of Weldments;"

(e) The weld material was controlled in accordance with MP-03, "Welding Material Control;"

(f) Process and quality control for each weld joint in Code piping was documented by a Weld Data Report ("WDR"), pursuant to Quality Control Instruction ("QCI")-19.1, which is used by the welders and provides a permanent record of the steps that must be completed in particular weld activities, including tests and inspections.

(g) The welds were inspected at pre-established hold points by the QA Inspector and by the ANI. The hold points, QA and ANI inspection results were recorded on the WDR.

(h) Non-destructive examination ("NDE") of welds was performed by NDE Examiners and the results were recorded on the WDR and verified by QA and ANI personnel.

- Generally, the procedures described above ensured that Code welds were performed in accordance with the Plant's ASME Section IX weld program. Governing procedures provided reference to Corporate Quality Control ("CQC")-19, "Weld Control," which again required that Code welds receive a WDR, and referenced QCI-19.1, "Preparation & Submittal of Weld Data Report & Repair Weld Data Report, Tank Fabrication Weld Record & Seismic I Weld Data Report" for detailed instructions on the use of WDRs. As prescribed by this procedure, the WDR included essentially all of the required quality attributes and documentation for welds within code boundaries. A Repair Weld Data Report ("RWDR"), was used by the welders to correct any deficiencies found in welds or base metals and provided a permanent record of what was done to repair a weld. These procedures and quality documentation are described in more

detail in the Affidavit of Charles H. Griffin (Exhibit 5), who was a Welding Engineer during Harris Plant construction.

- Construction procedure WP-115, "Pressure Testing of Pressure Piping (Nuclear Safety Related)" and CQC-22, "Pressure Test Inspection" governed the hydrostatic testing ("hydrotest") and inspection of the embedded lines connected to the Harris Spent Fuel Pools C and D. These procedures specifically required, prior to the hydrotest, the Mechanical QA Specialist verify:

- (a) All required piping documentation is complete, including manufacturing records for materials.

- (b) All required weld documentation (WDRs, RWDRs) is complete, including the successful completion of the required NDE of the welded part.

- The hydrotest was generally the final milestone for completion of a piping segment.

In summary, verification that hydrotests were complete and documented meant that Quality Assurance personnel independently verified all required tests, inspections and documentation pertaining to the construction of the piping being hydrotested were completed properly.

9. The SFPCCS piping in question is embedded in concrete. Since embedding a line in concrete represented a point at which piping was no longer accessible for inspections or rework, procedural controls were established to ensure that all required work activities had been completed and that documentation was in order prior to authorizing concrete placement. The

process and procedure measures for assuring the proper completion of activities prior to embedding a piping system in concrete included:

- Procedure WP-05, "Concrete Placement," included a pre-placement requirement for a craft superintendent sign-off on the concrete placement report to signify completion of the craft's installation and superintendents inspection thereof. This procedure required that this sign-off be made by all craft superintendents, as a safeguard against omissions, whether or not they had material in a particular placement. Subsequently, procedure WP-05 required that the Construction Inspection ("CI") Unit be notified when the installation was complete and ready for pre-placement inspection.

- Procedure TP-24, "Mechanical Pipe Installation Inspection" provided requirements for the Construction Inspection Unit relative to inspection of piping, and included separate sections on embedded piping inspection. This procedure specifically required the CI inspector to inspect/verify the installation and documentation prior to concrete placement. The CI inspector was required to verify the specific installation attributes:
 - (a) That piping was installed in accordance with design drawings and documents, notably including verification of pipe spool identification.

 - (b) That piping was free from physical damage, and had no missing parts.

 - (c) That piping hydrotests were complete and documented.

- Prior to release of the concrete placement, QA was also required to signoff to confirm

readiness for the pour. Procedures governing this activity and signoff required that when a component(s) containing joints/welds subject to pressure test inspection was to be embedded, the QA/QC Inspector verify the pressure test has been performed and accepted prior to signing off the Concrete Placement Card.

- Thus, the concrete pour afforded yet another check of the proper QA documentation and accomplishment of required inspections.

10. The WDRs for the fifteen field welds in the SFPCS piping for Spent Fuel Pools C and D have been destroyed. However, the hydrostatic test records were found for thirteen of the fifteen field welds. The QA Inspector's initials and signature on the hydrotest record verifies that the WDRs were properly completed, required QA and ANI inspections were performed at mandatory hold points, and NDE examinations were performed satisfactorily. In addition, the QA Inspector's initials and signature verifies that the hydrotest was performed pursuant to procedure, the proper pressure was applied, instruments were calibrated, and the pressure held for the required length of the test. As part of the hydrotest, the QA Inspector carefully walked down the entire piping segment undergoing the hydrotest while the piping was pressurized and visually inspected each vendor weld and field weld for the full circumference of the weld.

11. Attachment B to this affidavit is a hydrotest report for a segment of the SFPCS embedded piping that included three of the field welds (designated 2-SF-143-FW-512, -513, and -514). The welds are listed on the second page; the first three welds in the list are the field welds and the remaining six welds are vendor welds. My signature on the first page in the block for "Mech. QA/QC Specialist" indicates that I verified the information provided by the test

engineer regarding the test conditions and boundaries. My colleague, Tommy Gilbert (with the initials "TG") identified the piping spools and welds included within the hydrotest boundary and verified the completeness of the QA documentation, including WDRs. I verified the proper conduct of the hydrotest, walked down and visually inspected the piping and each weld, annotated the isometric drawing to indicate the components and welds subjected to the hydrotest, and verified the recalibration of the test pressure gauge. Additionally, I verified the ANI had reviewed and accepted the WDRs prior to the hydrotest and personally witnessed the test. My initials ("DLS") and signature are seen on the second page. In addition, the first page of Attachment B is stamped "INCORPORATED ON N-5." My initials, "DLS", and the date 6/7/82 are found in the stamped box. This meant that subsequent to the hydrotest, I received the field installation package for the boundaries of this hydrotest and all of the QA documentation, including the WDRs, reviewed the documentation for completeness and had the data incorporated into the N-5 database. I was responsible for this database and information from the SFPCCS for Spent Fuel Pools C and D was entered into the N-5 database before Harris Unit 2 was canceled in 1983. Thus, I can state that I reviewed and verified the information in the WDRs for field welds 2-SF-143-FW-512, -513, and -514 and visually inspected and accepted these welds under hydrotest conditions.

12. Attachment C is an earlier version of the hydrotest report for a segment of piping that was tested in 1979. I did not witness this hydrotest, but again the stamp "INCORPORATED ON N-5" with my initials, indicates that I reviewed and verified the completeness of the WDRs for the field welds within the boundary of this hydrotest. They are listed on the second page (2-SF-1-FW-4 and -5) and third page (2-SF-1-FW-1 and -2). (The other welds listed are vendor welds.)

Attachment D is a hydrotest report for another segment of embedded piping that was tested in 1982 and witnessed by my colleague Tommy Gilbert. Again the stamp "INCORPORATED ON N-5," with my initials, indicates that I reviewed and verified the completeness of the WDRs for the field welds within the boundary of that hydrotest. They are listed on the second page (2-SF-144-FW-515, -516, and -517).

13. From my review of hydrotest records for which I was personally responsible in some manner during the construction of the SFPCCS for Spent Fuel Pools C and D, I can state without reservation that I personally reviewed and verified the completeness of ten of the fifteen WDRs for the welds in embedded piping.

14. Attachment E is a Deficiency and Disposition Report which identifies a deficiency regarding whether plate rings near the ends of certain SFPCCS piping should have been included in the hydrotests. The significance of this report to this proceeding is that it provides indirect confirmation that the two welds for which a hydrotest report was not located were indeed subjected to a hydrotest in July 1979. The two field welds are designated 2-SF-8-FW-65 and -66. These two welds, as confirmed by a review of the isometric drawings, are found in lines 3SF12-6SB-2&3 and 3SF12-5SA-2&3, as noted on the second page of Attachment E.

15. In summary, I have spent my entire professional life involved in assuring the quality of construction, modifications, engineering support, and the maintenance of the design bases of CP&L's Harris Nuclear Plant. I am confident that the SFPCCS piping for all four Spent Fuel Pools (pools A and B (that are operating) and pools C and D (for which CP&L is seeking the license amendment to operate)) was constructed and inspected pursuant to CP&L's ASME QA

Program, and that the requirements of the QA Program, as implemented at the Harris Plant, were effective in ensuring the quality of construction. The most obvious evidence in support of this opinion is the successful operation of Spent Fuel Pools A and B. There was no difference in the installation procedures/processes, inspection program, testing requirements, inspection audits, and quality documentation requirements between the construction of the SFPCCS for Spent Fuel Pools A and B and Spent Fuel Pools C and D. I personally know from available records that I reviewed the WDRs for ten of the fifteen welds embedded in the SFPCCS piping for Spent Fuel Pools C and D. There were numerous checks and cross-checks to ensure all QA Program requirements were met. Based on his initials on the pour card, my colleague Tommy Gilbert can attest that a final check of quality documentation was made before the concrete was poured. QA Program requirements were designed to ensure the pipe welding, installation, inspections and tests were performed as required by ASME Code and the activities were recorded on QA Records. There is reasonable assurance that the WDRs were prepared for the fifteen embedded welds in the SFPCCS associated with Spent Fuel Pools C and D, because the failure to prepare these required QA Records would have been a complete breakdown of the CP&L ASME Code QA Program. That breakdown did not occur. The hydrotest reports and concrete pour cards provide documented assurance that the WDRs were prepared and met procedural requirements.

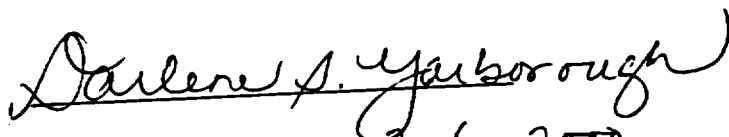
16. Based on the foregoing, I am confident that WDRs for each of the fifteen welds (including the five WDRs which I cannot say from available records that I personally reviewed) were prepared and required QA inspections were performed.

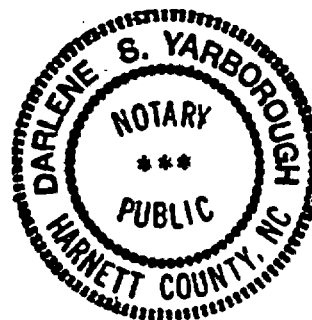
I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 30, 1999.


David L. Shockley

Subscribed and sworn to before me
this 30 day of December 1999.


My Commission expires: 2-6-2000



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Carolina Power & Light Company

ASME QUALITY ASSURANCE MANUAL

SHEARON HARRIS NUCLEAR POWER PLANT
POST OFFICE BOX 101
WAKE COUNTY, NEW HILL, NORTH CAROLINA

Recommended by: *Harold R. Bank* 6/12/85
Manager - Corporate Quality Assurance Department

Recommended by: *Ally Dutton* 6/13/85
Vice President - Nuclear Engineering and Licensing Department

Recommended by: *Shearn D. Smith* 6/12/85
Vice President - Nuclear Plant Construction Department

Recommended by: *R.A. Watson* 6/12/85
Vice President - Harris Nuclear Project Department

Recommended by: *M.A. Smith* 6-12-85
Senior Vice President - Nuclear Generation

Approval by: *E.E. [Signature]* 6-20-85
Senior/Executive Vice President
Power Supply and Engineering & Construction

- | | | |
|------------------------|----------------------|---|
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| Second Edition, Rev. 5 | - September 23, 1983 | |
| Second Edition, Rev. 6 | - October 21, 1983 | |
| Second Edition, Rev. 7 | - January 12, 1984 | |
| Second Edition, Rev. 8 | - February 29, 1984 | |
| Second Edition, Rev. 9 | - July 3, 1984 | |

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Policy Statement


It is the policy of the Carolina Power & Light Company to engineer, construct, and operate nuclear power plants without jeopardy to public health and safety. Measures shall be set forth and documented for quality assurance which encompass those responsibilities within CP&L and those responsibilities delegated to companies supporting the engineering, construction and start-up of nuclear power plant projects. These documented measures comprise the CP&L ASME Quality Assurance Manual and shall be strictly adhered to. This Manual provides quality measures for assuring nuclear safety for long-term power production; engineering design requirements and objectives are achieved in construction of new facilities; and plant functional capability is maintained in operating plants. These measures assure compliance with the quality requirements of ASME Boiler and Pressure Vessel Code, Section III, Division 1, Nuclear Power Plant Components and applicable Federal, State and local regulations and codes.

I take full and complete responsibility for the program described in this CP&L ASME Quality Assurance Manual. I have assigned the responsibility for its implementation as documented and approved herein for the Engineering, Construction and Start-Up portions of this program to the Senior Vice President - Nuclear Generation, and to the Manager - Corporate Quality Assurance Department.

The Senior Vice President in charge of Nuclear Generation has assigned the responsibility for implementation of his portion of this program to the Vice President - Harris Nuclear Project, and to the Vice President - Nuclear Plant Construction and the Vice President - Nuclear Engineering and Licensing who shall have stop-work authority within their department's responsibility for work determined to be out of compliance with this program.

The Manager - Corporate Quality Assurance Department, in the implementation of his portion of this program, has delegated to the Manager - Quality Assurance/Quality Control Harris Plant and the Manager - Quality Assurance Services, the authority to stop any work determined to be out of compliance with applicable sections of the ASME Code and this program.

The Manager - Corporate Quality Assurance Department has the responsibility for implementing the Corporate quality assurance audit program for the engineering, construction and start-up of nuclear power plants.



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



Carolina Power & Light Company
Raleigh, N. C. 27602

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ADDENDUM STATEMENT

This Quality Assurance Manual is applicable to the engineering, construction and start-up of the Shearon Harris Nuclear Power Plant located at New Hill in Wake and Chatham Counties, North Carolina, consisting of one pressurized water reactor unit. The Nuclear Steam Supply System was purchased from Westinghouse Pressurized Water Reactor Division, Pittsburgh, Pennsylvania.

The Architect-Engineer for the Shearon Harris Nuclear Power Plant is Ebasco Services, Inc., New York, New York.

The Prime Constructor is Daniel International Corporation of Greenville, South Carolina, who will work under direct supervision and technical control of Carolina Power & Light Company management personnel at the site. The responsibility for construction activities at this nuclear power plant is that of Carolina Power & Light Company, who has the authority to control assignment and removal of personnel at Carolina Power & Light Company's discretion.

Carolina Power & Light Company will secure the services, as appropriate, of organizations to furnish manpower for accomplishing work. Contractual arrangements will clearly reserve to Carolina Power & Light Company those prerogatives necessary to totally control the quality of the work.

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△ The Shearon Harris Nuclear Power Plant Unit 1 was docketed by the Nuclear Regulatory Commission (Atomic Energy Commission) September 29, 1971. Docket number issued is 50-400.

△ The Nuclear Steam Supply System piping for Unit 1 was purchased from Westinghouse Pressurized Water Reactor Division to the 1971 Edition of the ASME Code Section III, Division 1, including the 1973 Summer Addenda.

Balance of plant piping requiring Code stamping were purchased by Ebasco Services, Inc., to the 1971 Edition of the ASME Code, Section III, Division 1, including the 1973 Summer Addenda.

The applicable Code Edition and Addenda for field fabrication and installation of Code items shall be the 1974 Edition of the ASME Code, Section III, Division 1, including the 1976 Winter Addenda.

For the Shearon Harris Nuclear Power Plant project, the design, fabrication and installation of component supports do not come within the scope of the ASME Quality Assurance Manual.

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APPROVED	<i>[Signature]</i>	<i>[Signature]</i>								



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Raleigh, N. C. 27602

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

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



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Approval - An act of endorsing or adding positive authorization, or both, indicated by signature and date on the document or on a record traceable to the document..

Appurtenances - Code-stamp parts which are attached to components that have been completed and previously stamped.

Architect-Engineer (A-E) - Consulting engineering organization which may be assigned as the owner's designee responsibility for portions of a nuclear power plant project.

"As-Built" Sketch - A sketch or tabulation of materials identifying each piece of material with the Certified Material Test Report and the coded marking.

"As-Constructed" Drawing - The Approved for Construction (AFC) design drawing either revised to incorporate, or appended with, authorized design change documents.

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Authorized Nuclear Inspector Supervisor (ANIS) - The Authorized Nuclear Inspector Supervisor who has been deemed qualified may be designated by his employer as the Authorized Nuclear Inspector Supervisor and shall meet the requirements of ANSI Standard N626 document.

Certificate of Authorization - A document issued by the American Society of Mechanical Engineers as evidence that CP&L as the Owner, Manufacturer, Fabricator, or Installer has met specific requirements set forth in the ASME Code Section III.

2 Certificate of Compliance - A written statement signed by a qualified party certifying that items or services comply with specific requirements.

72 Certification of Qualification - A signed statement supported by documentary evidence in the case of welding procedures or performance, or the credentials of the signer in the case of nondestructive examination certifying that specified criteria have been met by an individual or procedure.

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3 Data Reports - Data reports, e.g., Forms N-1, N-3, N-5, NPP-1, and N-1A, as found in the ASME Code, Section III, shall be completed and certified by the Owner or Manufacturer for each component, system, and installation.

Design Bases - That information which identifies the specific functions to be performed by a structure, system, or component of a facility, and the specific values or ranges of values chosen for controlling parameters as reference bounds for design. These values may be (1) restraints derived from generally accepted "state of the art" practices for achieving functional goals, or (2) requirements derived from analysis (based on calculation and/or experiments) of the effects of a postulated accident for which a structure, system, or component must meet its functional goals.

Design Change Request - A documented request for changes, corrections, or additions to design documents previously released for use.

Design Documents - Certified Design Specifications and drawings derived from design bases that delineate plant item design, quality assurance, and process requirements for use in procurement, fabrication, installation,

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examination, and testing; and analyses and reports that substantiate design characteristics, or evaluate plant item performance.

Design Document Reference File - A file of the latest revisions of design documents approved for release and use in the design and construction of a nuclear power plant project, including as-built and as-installed documents.

Design Organization - An organization that has been assigned the responsibility for development or revision and documentation of the design of a plant structure, system, equipment, or parts thereof.

Design Specifications - The engineering and performance requirements which provide a complete basis for designing a plant item and/or technical information necessary for purchasing a plant item. Design Specifications are documented and certified by, or for, CP&L for each component and appurtenance of the nuclear plant. Design Specifications will be provided by the Design Organization, the A-E, or NSSS Supplier, as appropriate. Specifications generated by the Harris

△ 2 Plant Construction Section will be identified as site-generated specifications.

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2 Discipline Engineer - The Discipline Engineer is an individual who has been delegated authority by the Discipline Manager. The Discipline Engineer may hold the title of Resident Engineer, Principal Engineer, Project Engineer, etc.

Documentation - Any written or pictorial information describing, defining, specifying, reporting, or certifying activities, requirements, procedures, or results.

Field Change Request - A written request originating at the construction site for a design change.

Holdpoints - Mandatory holdpoints at which witnessing of activities is required by CP&L representative or the ANI. Work shall not proceed beyond mandatory holdpoints without the written consent of the CP&L representative or ANI, as applicable.

Inspection Specialist (IS) - The Inspection Specialist performs duties required by the ASME Code who has demonstrated his qualifications by passing an examination acceptable to the ASME in one or more methods of nondestructive examination and, in addition, the test for Inspector Supervisor given by the National Board of Boiler and Pressure Vessel Inspectors for knowledge of, and familiarity with, the ASME Code Section III, Division 1.

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Installer - An organization which installs and joins components, piping subassemblies, assemblies, and appurtenances at the construction site in accordance with design documents approved for the nuclear power plant project, and which holds a Certificate of Authorization from the ASME and thereby qualifies to Code-stamp its work.

Item - Any structure, system, equipment, material, components, parts, pieces, or part thereof installed or intended to be installed in the nuclear power plant, including spare or replacement parts of the item, as permitted by Section III of the ASME Code.

Manufacturer - One who produces any class of component, material, part, or appurtenance to meet prescribed design requirements. An organization which fabricates components, parts, or appurtenances to meet the Design Specifications and the rules of Section III of the ASME Code.

Nonconformance - A deficiency in characteristic, documentation, or procedure which renders the quality of an item unacceptable or indeterminate. A nonconformance is a deviation from specified requirements. Examples of nonconformance include physical defects; test failures; incorrect or inadequate documentation; or deviation from prescribed processing, inspection or test procedures.

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N-Stamp - Official N-type symbol provided by the ASME and applied to plant items upon certification of compliance with applicable rules of the ASME Code, Section III. N-stamps of interest in this document include the NPT stamp for piping subassemblies, the N-stamp for piping systems and storage tanks, and the NA-stamp for installation.

Nuclear Steam Supply System (NSSS) - In general, the nuclear reactor and associated systems and equipment that generate and control the delivery of steam to the Turbine-Generator, specifically those plant items included in the contracted scope of supply for the NSSS Supplier.

NSSS Supplier - The design organization and Supplier for the NSSS.

Owner - The organization which obtains a Construction Permit from the Regulatory Agency for the construction of a nuclear power plant. As used in this Manual, Owner will mean Carolina Power & Light Company (CP&L).

Overpressure Protection Analysis - A comprehensive, documented analysis required for systems which contain ASME Code Class 1 components and Code Class 2 steam and feedwater systems.

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Overpressure Protection Report - A certified report of the analysis of overpressure protection for systems which contain ASME Code Class 1 components.

Parts - Items which have work performed on them requiring the presence of or verification by the Authorized Nuclear Inspector and which are furnished to a component manufacturer under a different Certificate of Authorization than that applying to the component. By definition, a part is attached to or becomes a part of a component before completion and stamping of the component.

Piping Subassemblies - Sections of a piping system consisting of fittings and pipes or tubes which are fabricated as subassemblies in a shop or in the field before they are installed in the nuclear power system.

HPCS Procedures - Harris Plant Construction Section procedures which are developed by that organization for site use.

NELD Procedures - Nuclear Engineering and Licensing Department procedures which are developed by that organization for department or Harris Plant Engineering Section use.

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Plant Start-Up - The test period beginning with completion of construction (on a system or equipment basis) through completion of the Start-Up Power Test Program. The Start-Up Power Test Program encompasses initial criticality, zero power operation, and ascension to full power.

NPCD Procedures - Nuclear Plant Construction Department procedures which are developed by that organization for either department or site use.

Plant Start-Up Power Test Program - A systematic test program to verify that plant systems and equipment have been constructed and safely function in accordance with design documents. The test program includes flushing, pressure testing, system functional checks and initial operation.

Pressure-Boundary Item - A component or appurtenance which in application is pressure-retaining or pressure-containing, including welding materials applied at the construction site to fabricate or install the pressure-boundary item.

Quality Assurance - All those planned and systematic actions necessary to provide adequate confidence that a structure, system, or equipment will perform satisfactorily in service.

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Quality Control - Those quality assurance actions which provide a means to control and measure the characteristics of an item, process, or facility to established requirements.

Quality Release - A document utilized by the A-E, NSSS Supplier, or CP&L quality assurance representatives to release item(s) for shipment from a Supplier's facility. CP&L quality release document is titled Release for Shipment.

Repair - The process of restoring a nonconforming characteristic to a condition such that the capability of an item to function reliably and safely complies with the Code even though that item still may not conform to the original requirement

Review - A systematic evaluation documented by a signoff, stamp, or written review and dated.

Rework - The process by which a nonconforming item is made to conform to a prior specified requirement by completion, remachining, or reassembling.

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SHNPP Start-Up Manual - A controlled document which contains the administrative controls and procedures required to implement the Plant Start-Up Program and the applicable requirements of this Manual. The Start-Up Manual defines the interface agreement between the Harris Plant Operations Section (HPOS) and the Harris Plant Construction Section (HPCS) regarding (i) Code pressure tests to be performed by HPOS and Code pressure tests to be performed by HPCS; and (ii) the use of HPCS tools, gauges and equipment, and the HPCS calibration control system for pressure tests performed by HPOS personnel. The Start-Up Manual also 4 addresses the controls for item disassembly/reassembly to support Code pressure tests performed by HPOS.

SNT-TC-1A (1975) - The American Society for Nondestructive Testing publication which present Code requirement practices for qualifying and certifying personnel performing specific methods for nondestructive examination and evaluation of the examination results.

Source Surveillance - A review, observation, or inspection for the purpose of verifying that an action has been accomplished as specified at the location of material procurement or manufacture.

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Stress Report - A certified report of stress analysis provided as per Code requirements. It will consist of a complete set of stress analysis calculations establishing that the referenced drawings for construction comply with the requirements of the Design Specifications.

Supplier - An approved vendor, manufacturer, or contractor for materials, items, equipment, or services for the nuclear power plant project.

Use-as-is - A disposition, documented on a Field Change Request/Permanent Waiver form, which may be imposed for a nonconformance when it can be established that the discrepancy will result in no adverse conditions and that the item under consideration will continue to meet all engineering functional requirements, including performance, maintainability, fit, and safety. ASME items dispositioned "use as is" shall meet all applicable Code requirements.

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1.0 GENERAL

1.1 Scope

1.1.1

This Manual provides measures to assure compliance with the requirements and rules of the ASME Boiler and Pressure Vessel Code, Section III, Division 1, Nuclear Power Plant Components. This Manual shall be applied to activities associated with plant items and services for which compliance with the rules of the ASME Code, Section III, is mandatory.

1.1.2

Carolina Power & Light Company (CP&L) will qualify as the Owner for the nuclear power plant engineering and construction project as prescribed in the ASME Code, Section III. CP&L qualifies as the N certificate holder assuming overall responsibility for piping systems and storage tanks; Installer; and, as the construction site fabricator, will apply the appropriate N-type symbol stamp.

1.1.3

Supporting companies; i.e., the Architect-Engineer (A-E), Nuclear Steam Supply System (NSSS) Supplier, and other Suppliers and


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



Contractors, shall operate in accordance with quality assurance (QA) programs which are in compliance with the requirements and rules of the Code and this Manual.

1.1.4 The Constructor shall operate in accordance to this Manual and CP&L's procedures and does not operate under a separate quality assurance program.

1.2 Responsibility for the Quality Assurance Program

1.2.1 The Manager - Corporate Quality Assurance is responsible to the Senior Executive Vice President - Power Supply and Engineering & Construction for implementation and corporate auditing of this QA Program. The authority and independence as discussed in paragraph 1.3.5 has been delegated to the Manager - Corporate Quality Assurance and personnel reporting to him.

1.2.2  The Manager - Nuclear Safety and Environmental Services is responsible for execution of the management review of Corporate Quality Assurance audit activities.

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1.2.3 The Senior Vice President - Nuclear Generation has assigned the responsibility for engineering, construction, and the Plant Start-Up Program to the Vice President - Harris Nuclear Project.

1.2.4 The Manager - Corporate Quality Assurance has delegated to the Manager - Quality Assurance/Quality Control (QA/QC) Harris Plant and the Manager - Quality Assurance (QA) Services, the authority to order stoppage of any work related to the Code which is determined to be out of compliance with this QA program. In addition, the Manager - QA/QC Harris Plant has been delegated the responsibilities for preparing this manual, controlling and distributing revisions to this Manual, and maintaining master files.

1.3 Organization and Responsibilities

CP&L organizational responsibilities for quality-related activities in engineering, construction and start-up of nuclear power plants are shown on the CP&L Organization Chart for Nuclear Power Plant Projects (Exhibit 1-1).



















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1.3.1 Harris Nuclear Project Department (HNPDP)

The Vice President - Harris Nuclear Project has overall responsibility for engineering, construction and start-up of the Harris Plant. He assigns responsibility for engineering to the Engineering General Manager, for construction, including welding to the General Manager - Milestone Completion, for start-up testing and operation to the General Manager - Harris Plant, and for Material Control/Storage and Document Control to the Manager - Harris Project Administration. The General Manager - Milestone Completion is supported by a matrix organization consisting of the Project General Manager - Construction, the Engineering General Manager, for items pertaining to project completion, and by the General Manager - Harris Plant, through the Manager - Start-Up, for start-up testing activities.




1.3.1.1 Harris Plant Engineering Section (HPES)


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
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1.3.1.1.1 The Engineering General Manager, who reports to the Vice President - Harris Nuclear Project, has overall responsibility for the planning, scheduling, estimating, cost control, and coordination of engineering-related activities necessary for nuclear power plant construction projects required by the Company. He manages the contract of the assigned A-E, engineering consultant(s), and other assigned purchase contracts associated with his assigned nuclear power plant construction project. As necessary, he may request the NELD to perform projects which, due to timeliness or technical expertise, may not be performed by HPES. This work includes - coordinating with the A-E the review and approval of A-E design and procurement documents, the procurement of engineered items and services, and the review and comments of NSSS specifications. The Engineering General Manager has delegated responsibility for design and technical matters to the Manager - Harris Plant Engineering, and for contract administration and scheduling to the Manager - Engineering Management.

The Section responsibilities include:


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










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engineering provided by engineering consultants for the nuclear power plant construction projects required by the Company are acceptable and are in compliance with the best interests of the Company. The primary responsibility of the Harris Plant Engineering Section is to provide well engineered nuclear power plants which comply with the necessary codes, regulations, and with good operating practices. The Engineering General Manager is responsible for making those technical decisions, such as approval of specifications and proposals which are required of CP&L by various project agreements.

1.3.1.2 Harris Plant Construction Section (HPCS)

1.3.1.2.1 The Project General Manager - Construction has direct management responsibility for plant construction. The Project General Manager - Construction is responsible for construction of the nuclear power plant that conforms to Code, procedures, permits, specifications, drawings, and Corporate policies and commitments. He is directly accountable to the General Manager - Milestone Completion for constructing the assigned nuclear power plant in

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





and procedures and other documents required by those individuals engaged in Code Work at the site. He shall be responsible for the final control and storage of QA Records.

1.3.1.5 Supporting Departments

1.3.1.5.1 The Vice President - Nuclear Engineering and Licensing has the responsibility for providing procedures, technical support (including the management of outside consultants) and engineering services as requested to the Harris Plant Engineering Section as required.

1.3.1.5.2 The Vice President - Nuclear Plant Construction has overall responsibility for field procurement. He assigns responsibility for procurement of items requisitioned in the field and the procurement of labor services and/or a combination of labor services and related items requisitioned in the field to the Manager - Construction Procurement and Contracting. The Manager - Construction Procurement and Contracting assigns the function of procurement of labor services to the Director - Construction Contracts and assigns the


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










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function for procurement of items requisitioned in the field to the Principal Buyer - Harris Project who is located on site.

1.3.2 Quality Assurance/Quality Control

1.3.2.1 The Manager - QA/QC Harris Plant has direct management responsibility for QA/QC activities related to site engineering, construction and start-up. He is directly accountable to the Manager - Corporate Quality Assurance for implementation of this Manual. Administrative control (salary review, hire/fire, position assignment) of individuals within the QA/QC Harris Plant Section, subject to the approval of the Manager - Corporate Quality Assurance, is the responsibility of the Manager - QA/QC Harris Plant.

1.3.2.2 Control of the Code stamps and Certificates of Authorization shall be the responsibility of the Manager - QA/QC Harris Plant. Certificates and stamps shall be promptly returned to the American Society of Mechanical Engineers upon demand.


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1.3.2.4

The Director - QA/QC - Harris Plant, reporting to the Manager - QA/QC, is responsible for those functions listed in Paragraph 1.3.2.3, and for conducting the site QA/QC activities in accordance with this Manual and QA/QC procedures. He supervises the CP&L site QA/QC personnel in the various disciplines who are assigned to his unit. The Director - QA/QC - Harris Plant has the responsibility for initiating and completing ASME Code, Section III, Data Reports. Unless otherwise noted, the Director - QA/QC - Harris Plant referred to herein, hereafter will be addressed as the Director - QA/QC.

1.3.2.5

The Principal QA/QC Specialist - NDE, under the direction of the Manager - QA/QC Harris Plant, is responsible for implementing the NDE program, and the following:

- a. Training, qualification and certification of NDE personnel.
- b. Providing nondestructive examination procedures (NDE).
- c. Providing, as necessary, Level III expertise which includes interpretation of test data.
- d. Review applicable contractor NDE procedures involving Code class work.


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Harris Operations QA/QC as applicable, for their respective areas of responsibility




















1.3.3 Quality Assurance Services

1.3.3.1 The Manager - QA Services has direct management responsibility for engineering, vendor surveillance, and training QA activities. He is also responsible for conducting an independent corporate audit program. He is directly accountable to the Manager - Corporate Quality Assurance for implementation of his responsibilities as described in this Manual (Exhibit 1-1). Administrative control⁸ (salary review, hire/fire, position assignment) of individuals within the Quality Assurance Services Section, is the responsibility of the Manager - QA Services.



1.3.3.2 The Principal QA Engineer - Quality Assurance Engineering Unit, under the direction of the Manager - QA Services, is responsible for the following:

- a. Reviewing A-E and NSSS purchase orders and contracts for inclusion of applicable QA/QC requirements.


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conditions, practices, and items that could degrade plant quality.

- b. Organizations which are subject to audits shall include those manufacturers of Code items and subcontractors of services contracted by the NSSS Supplier and the A-E. For procurement by the NSSS Supplier and the A-E, the actual function of conducting such audits may be delegated to the NSSS Supplier and the A-E. When audits are performed by the NSSS Supplier and the A-E, the Performance Evaluation Unit personnel will monitor and may participate in the audits.
- c. For CP&L procurement, auditing the QA programs of suppliers of Code items and/or services. Audits are periodically scheduled at least every three years or once within the life of the contract, whichever comes first, to assure compliance with the approved QA program. The preaward source evaluation audit may suffice for the initial periodic audit. An annual evaluation shall be made by the QA Services Section to determine the necessity of increasing the audit frequency. Material Suppliers and Material Manufacturers not possessing the Quality System Certificate (Materials) shall be audited annually.




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


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- b. Document and submit to CP&L or its agent for review and acceptance a QA program that meets the ASME Code, Section III, as applicable for the assigned scope of work related to Code plant items, and which is consistent with the requirements of this Manual.
- c. Implement on a timely basis the applicable portions of their Quality Assurance Program by written procedures covering activities such as administrative controls, QA activities, construction processes, testing, and material control.



















1.3.4.2

The A-E, the principal engineering organization for CP&L, is responsible for overall engineering design and design coordination of the nuclear power plant, and for technical guidance of personnel participating in the engineering design and application of the engineering design during construction (Exhibit 1-2). The A-E is responsible to the Engineering General Manager for project contract activities. The responsibilities of the A-E include:

- a. Development of design criteria, design bases, and nuclear safety evaluations; and preparation of documents, such as flow diagrams, general arrangement drawings, and other descriptive

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- b. Direction of NSSS design, including document reviews, audits of their Supplier activities, technical reviews of their Supplier design concepts, and interfaces with other design activities.
- c. Developing Design Specifications and other design documents which include Code requirements, and submitting them to the A-E for review for items of the NSSS that interface with the balance of plant or which otherwise could influence balance-of-plant design (Exhibit 1-2).
- d. Control of NSSS design documents and their distribution.
- e. Performing procurement of NSSS items and reviewing NSSS support activities to assure compliance with specifications. This work will include surveillance in the form of shop inspections and audits, when appropriate.
- f. Provide controls that will include stopping work that is nonconforming, controlling disposition and correction of nonconformities, and evaluating and accepting corrected items or practices.
- g. Maintaining control of NSSS items and activities to assure that deliveries to the construction site meet requirements.


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


















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1.3.4.4 The term "Constructor" refers to one or more Contractors who are responsible to the Project General Managers for erection of the plant, installation of systems and equipment, and for construction tests to prove the acceptability of installed items. The Constructor will conduct work related to Code items in accordance with this Manual, CP&L procedures and supervision.

1.3.4.5 Suppliers are responsible to the organization that issues the Purchase Order. Suppliers are responsible for the activities, items, and services of their subvendors or subcontractors and will audit such activities as appropriate to the complexity of the work and importance to the nuclear safety of the plant. Suppliers will perform work related to Code items in accordance with the requirements of their accepted QA programs and applicable ASME Code.

1.3.5 Documentation of Authority and Independence

The following requirements relating to engineering, construction and start-up of nuclear power plants shall be met by CP&L management and by the management of supporting companies:

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a. The authority and duties of individuals and organizations performing QA functions shall be clearly established and delineated in writing. These individuals and organizations shall have sufficient authority and organization freedom to:

- 1) Identify quality problems.
- 2) Direct work to be stopped when necessary to maintain quality.
- 3) Initiate, recommend, or provide solutions for conditions adverse to quality.
- 4) Verify implementation of solutions to quality problems.

b. An individual or organization assigned responsibility for checking, auditing, inspecting, or otherwise verifying that an activity has been correctly performed shall be independent of the individual or group directly responsible for performing or supervising the specific activity.

1.4

Training and Qualification


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1.4.1

Each CP&L Department manager for the Construction Site and General Office is responsible for developing procedures which define the training and indoctrination requirements for their personnel. As a minimum, personnel will be trained in the applicable requirements of the Manual, supporting procedures and subsequent changes. This training will be conducted by personnel defined in such procedures and will be completed prior to the person participating in the specific Code activity. Records attesting to such training will be maintained by each Department. On-site training procedures will be reviewed for adequacy by the Manager - QA/QC Harris Plant. Off-site training procedures will be reviewed for adequacy by the Manager - QA Services. Records of formal classroom training shall include name of instructor, subject matter, date, time spent, and list of attendees. Records of other training shall be documented as specified in procedures and would identify the individual and subject matter as a minimum.

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HPCS interface with the engineering organization such as HPES/A-E in matters concerning design, shall be as described in HPCS procedures



in interface with design engineering. The responsibility for interface is assigned to the Manager - Harris Project Administration who shall maintain records of the exchange of information regarding design documents. Interface between the Start-Up organization and HPES/HPCS in matters concerning design documents shall be in accordance with the procedures described in HPCS Administrative Procedures.

2.1.2

Intercompany design communications, including distribution of design documents, shall be as depicted on the Nuclear Engineering Organizational Chart (Exhibit 1-2) and distribution schedule.

Each company participating in design of the plant shall designate a coordinator responsible to receive and transmit intercompany design engineering communications in accordance with the project distribution schedule. Distribution controls shall include


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
provisions for maintaining a record of design document distribution for intercompany review and comment.

2.1.3 Design documents shall be prepared, approved, and released in accordance with those steps outlined in the NELD procedures and the A-E's and NSSS Supplier's documented QA program.

2.2 Design Specifications, Calculations, Stress and/or Design Reports

2.2.1 The Design Specification shall include, as applicable, the following information:

- a. The identification of the type and functions of the item, including any dimensions upon which the functional capability depends.
- b. The design requirements, including the design bases, and the mechanical and operational loadings, including vibration and shock.
- c. The environmental conditions, including radiation.
- d. Code classification of the components and appurtenances.

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- e. Definition of the boundaries of the item for Code application.
- f. Material requirements, including impact tests, when applicable
- g. The requirements for Stress and/or Design Reports.
- h. The requirements for the Overpressure Protection Report or Overpressure Protection Analysis.
- i. The requirements for the various Data Reports particularly with respect to transmittal requirements to enforcement authorities.
- j. QA program requirements.
- k. When operability of an item is a requirement, the Design Specification shall make reference to other appropriate documents which specify the operating requirements.
- l. In addition to the above, will contain all the information contained in paragraph 2.4.2.1.

2.2.2

The NSSS Supplier, A-E, or other approved design organization as applicable, is responsible for certification of the Design Specifications as the Owner's designee. The Design Specification shall be certified to be correct, complete and in compliance with the Code. Certification will be by one or more Registered Professional Engineers competent in the applicable field of design

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of components and related nuclear power plant requirements.

2.2.3 CP&L has the responsibility for assuring that copies of the certified Design Specifications are maintained and made available to the ANI and the enforcement authority for the State of North Carolina having jurisdiction for the construction site before the Code items are placed in service.

2.2.4 The NSSS Supplier, the A-E, or other approved design organization responsible for Code items shall provide Design Specifications that are in accordance with the Code. The Design Specification shall assure consistency and compatibility of design within the plant.

2.2.5 CP&L, as the N Certificate Holder, is responsible for the design of piping systems, storage tanks, and the adequacy and completeness of the design documents. CP&L shall be responsible for assuring that the Stress and/or Design Reports are prepared, based on "as-constructed" drawings, as set forth in the Code. Generation, certification and maintenance of the "as-constructed" drawings is

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satisfies the requirements of the Code, the Design Specification and the "as-constructed" drawing.

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5 2.2.6

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CP&L, or it's designee, shall assure that the certified Stress Report is reviewed to verify that the report satisfies the design and operating conditions stated in the Design Specification. Certification of this review will be attached to the stress report and on file and readily available to the ANI and enforcement authority having jurisdiction for the construction site prior to Code stamping.

2.2.7

















Modifications of any design document, as authorized in paragraph 2.3.4, from the revision used in preparing a Stress Report to comply with requirements of the Code shall be reconciled by the responsible design organization with those calculations and the as-constructed drawings so certified. Copies of the certified drawings shall (which accompany the Stress Report) be filed as specified for the Stress Report in Paragraph 2.2.6. The Supplier, through the A-E or NSSS Supplier, is responsible for certification, filing, and distribution of the modified drawing.

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2.2.8 For systems that include Code Class 1 components and Code Class 2 steam and feedwater systems, an analysis of the overpressure protection system shall be performed and documented. The analysis will develop the specific data required by the Code and is the responsibility of the A-E, NSSS Supplier, or other approved design organization acting for CP&L.

For Code Class 1 components, an Overpressure Protection Report shall be prepared by the design organization responsible for the Design Specification or their subcontractors. This report will define the overpressure protection afforded for the components of the nuclear power system, extent and boundaries of the system, and the details and results of the overpressure protection analysis.

For Code Class 2 steam and feedwater systems, the Overpressure Protection Analysis shall be prepared by the design organization responsible for the Design Specification or their subcontractor and be on file and made available to the ANI and the enforcement agency authorities at the construction site upon request.

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2.2.8.1 The Overpressure Protection Report for Code Class 1 components shall be certified by a Registered Professional Engineer competent in the field of design of nuclear power systems and their operating and nuclear safety controls. This certification shall be recorded only after compliance with the requirements of the Code is established. This is the responsibility of the A-E or NSSS Supplier, as applicable, acting for CP&L.

2.2.8.2 Copies of the verified and certified Overpressure Protection Report shall be filed with the enforcement authorities having jurisdiction at the construction site and is the responsibility of the Manager - Harris Plant Engineering.

2.3 Design Changes

2.3.1 Design changes shall be controlled in accordance with design control measures applied to the original design and will require review and approval by the organization that performed the original design. Approval or authorization to proceed (i.e work may proceed prior to Final Analysis) as noted on the design change constitutes approval to initiate the work related to the subject change. Approval of the design change is required prior to final acceptance of the installation by QA/QC and the ANI. In the event it is not practical

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Preparation and approval of these specifications are detailed in HPCS procedures. Flow Chart, Appendix A (Exhibit 2-3), depicts the responsibilities for preparation, review, and approval. The required approvals of the site specification are by the Discipline Manager and the Manager, Harris Plant Engineering as shown on the Site Specification Cover Sheet (Exhibit 2-4).

















2.4.2.1 Construction site-generated specifications shall include the provisions of Paragraph 2.2.1 and the following requirements when they are within the scope of the applicable design documents and are appropriate to the procurement:

- a. Identification of the Code and standards to be applied and a delineation of the Code classifications and boundaries of application.
- b. Requirements for the QA program of the Suppliers and the requirement that a copy of the documented QA program and any proposed modifications thereof of the Suppliers be provided prior to and after purchase order award.
- c. Access requirements for preselection surveys and postselection

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shop inspections, surveillance, and auditing.


- d. Requirements for inspection and test plans and procedures to be developed and performed by the Supplier.
- e. Quantitative and qualitative acceptance criteria.
- f. Requirements for documentary evidence of quality to be furnished by the Supplier (e.g., test and analysis results; certification that specific requirements have been met; and, heat, lot, batch number, or other records of traceability of items to the source).
- g. Requirements for engineering, scheduling, and performance by the Supplier, including the plan and schedule for submittal of Supplier drawings, calculations, and special processes, such as NDE and welding, for review prior to application.
- h. Requirements for identification labels or markings on items.
- i. Special shipping, storage, and handling requirements for protection and preservation of the items or the need for such instructions to be provided by the Supplier.
- j. Requirements for calibration procedures and recommendations for calibration cycles to be furnished along with tools, gauges, instruments, or other equipment supplied and/or used by the

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Supplier for which calibration control is necessary.

- k. Requirements for manuals, drawings, and other documentation to be furnished by the Supplier for use as construction control documents or as information to be applied in preparing construction control documents.
- l. A document list showing attachments to the construction site-generated specification.
- m. Code class, Code effectivity, vendor QA program requirements.
- n. The Material Manufacturer's Quality System Certificate (materials) number and expiration date shall be shown on the CMTR or Certification of Compliance (COC) as applicable covering materials manufactured under the provisions of the Certificate. Material Manufacturers and Suppliers not holding an ASME Quality Systems Certificate shall include on the CMTR or COC as applicable, the revision level and date of their Quality System Program approved by CP&L.

2.4.2.2 The site-generated specification shall be reviewed by personnel assigned by the responsible Discipline Manager to assure that the engineering data and Code requirements are adequate for the


















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procedures applicable to Code items.

2.4.4.1 Development and approval of construction technical and work procedures is the responsibility of the Discipline Manager. Final approval shall be in accordance with HPCS procedures on preparation, approval, control, and release of procedures by authorized personnel. Preparation, approval, and release of welding procedures are detailed in Section 6.0.

2.4.5 Preparation of the Start-Up Manual and preparation and approval of the Start-Up procedures is the responsibility of the Manager Start-Up. Approval of the Start-Up Manual is the responsibility of the Vice President - Harris Nuclear Project. Distribution of the Start-Up Manual and Start-Up procedures is the responsibility of the Manager - Harris Project Administration. Approval and distribution of Start-Up procedures shall be in accordance with SHNPP Start-Up Manual section on preparation, approval, control and distribution of procedures by authorized personnel.

2.4.6 To facilitate installation of Code Instrumentation, the Discipline


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drawings; and administrative, technical, work, and welding procedures shall be as described in HPCS procedures on document distribution and control. The Manager - Harris Project Administration is responsible to assure documents received are recorded on the HPAS Document Record form (Exhibit 2-5), or recorded on a computer system that will indicate status, revision date, revision number and controlled distribution. Distribution of these documents shall be accomplished by utilizing the HPCS Document Transmittal form (Exhibit 2-6). Only documents issued through the HPAS Document Control Unit, or the Pipe Spool Fabrication/Modification Sheet (PSFMS) (Exhibit 5-4), the Instrument Isometric Change Request (IICR) (Exhibit 2-8) or the Instrumentation Sketch (Exhibit 2-9) when issued by the Discipline Manager may be used for construction. Controlled documents, issued by HPAS Document Control, will be updated as new revisions are received and FCRs will be distributed to holders of controlled copies of affected drawings at the time the FCR is approved. Documents processed and distributed through the HPAS Document Control Unit will be identified by a Document Control "RECEIVED" stamp. The PSFMS or IICR issued by the Discipline Manager will be stamped "Issued for a period not to exceed 7 days". Document Control will issue within seven days, a controlled copy of the PSFMS/IICR to be inserted in































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














the work package. The Instrumentation Sketch shall be controlled through the applicable HPCS procedure. Documents issued for information purposes that may not be used for construction will be stamped "UNCONTROLLED", "SUPERSEDED", or "VOID". The HPAS Document Control Unit may retain void/superseded documents as necessary for information purposes. The Director - QA/QC will ensure that documents required for record purposes are maintained in accordance with Corporate Quality Assurance Department Procedures.

2.5.2

Revisions to specifications, drawings, and procedures shall be controlled in accordance with those measures applied to the original document. Revisions shall be reviewed and approved by the same organization that performed the original review, or other properly authorized personnel competent in the applicable field of design and have adequate understanding of the requirements of the original document. Provisions shall assure that the current revisions of specifications, drawings, and procedures are available for use where the applicable function is being performed. Approved specifications, drawings and revisions to these documents will be

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2.5.3

Responsibility for document control in support of the Harris Plant Operations Section is that of the Manager - Harris Project Administration. The methods used by Harris Plant Operations for the distribution and control of design specifications, drawings, procedures and the Start-Up Manual shall be described in HPOS procedures. Revisions to specifications, drawings, procedures and manuals shall be controlled in the same manner as the original document. Provisions described in procedures shall assure that the current revisions of specifications, drawings, procedures and manuals are available to holders of controlled copies of these documents and available within the libraries and satellite document control areas throughout the plant. During the construction phase of the project, approved specifications, drawings and revisions to such documents will be processed by the HPAS Document Control Unit. The HPAS Document Control Unit will transmit documents to holders of controlled documents as listed on the approved distribution list by use of a controlled document distribution form which shall be acknowledged by the controlled document holder by signature and date indicating receipt of the documents transmitted and compliance with disposition instruction for adding and/or deleting documents. An accountability record of distribution and acknowledgement will be maintained by the HPAS



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Document Control Unit for a minimum period of two years. The Manager - Harris Project Administration shall survey monthly, in accordance with HPOS procedures, the document holders engaged in Code work where the applicable function is being performed to ensure the latest documents are in use. The Director - QA/QC is responsible for checking document control effectiveness by surveillance of HPOS activities to ensure that the latest approved documents are in use.

2.6 Identification of ASME Code Documents

2.6.1 Purchase requisitions, purchase orders, and procedures generated and/or used at the construction site for fabrication and installation of Code items shall be identified as "ASME Section III".

2.6.2 For documents generated and/or used at the construction site for other than Code work, no special marking is required to distinguish it from documents marked in accordance with Paragraph 2.6.1.


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





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3.0 PROCUREMENT

3.1 Service Contracts

The Department manager responsible for obtaining services is responsible for the applicable service contract. When contracted services affect the quality of the engineering or construction of the plant, the contract shall be controlled as described in this Subsection. Examples of services of the type covered by the Subsection are as follows:

- a. Engineering Consultant and A-E services contracted by the Harris Plant Engineering Section or the Nuclear Engineering and Licensing Department in support of nuclear power plant engineering and design projects.
- b. Constructor and/or Construction Manager contracted by the Nuclear Plant Construction Department in support of nuclear power plant construction projects.














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Prior to award, contracts for plant quality-related services shall be reviewed by the QA Services Section. Any revisions other than for commercial consideration to such a contract shall also be reviewed by the QA Services Section. These reviews will provide assurance that the quality-related requirements of the contract are adequate for the services specified. Additionally, the QA review will determine that the QA program of the Supplier and implementation meets the applicable requirements of the Code. Qualification of contractors will be in the same manner as described in paragraphs 3.3.5.1 through 3.3.8.

3.2 Procurement by the Architect-Engineer

The A-E is responsible for the procurement of Code-stamped items, including the NSSS, on behalf of CP&L as described in this Subsection.


3.2.1 Procurement by the A-E shall be initiated by preparing an inquiry. The inquiry shall consist of two parts:

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

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- a. The commercial portion which sets forth items, quantities, delivery schedule, terms, and conditions.
- b. The Design Specification which includes the engineering and quality requirements. (The Design Specification, as defined by this Manual, is prepared or revised, approved for release, and approved for use in the nuclear power plant project as set forth in Section 2.0.)


3.2.2 A recommended bidders list shall be prepared by the A-E for each inquiry. The bidders list identifies potential Suppliers.

3.2.3 The recommended bidders list shall be evaluated by the Harris¹ Plant Engineering Section. As a result of these evaluations and records of Supplier performance or surveys, bidders may be added to or deleted from the list. The recommended bidders list, as reviewed or amended, shall be approved by the Engineering General Manager to authorize its use for issue of inquiries to potential Suppliers.

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3.2.4 The inquiry shall be issued by the A-E to bidders on the list approved by CP&L. A copy of the inquiry will be forwarded to the Manager - QA Services and to the Manager - Harris Plant Engineering.

3.2.5 Proposals submitted by selected bidders to the A-E shall be evaluated (including the QA program submitted by the bidder). This evaluation and recommendations for selection of the Supplier shall be documented by the A-E.

Proposals, including the A-E's evaluations and recommendations, shall be submitted to CP&L for approval.

3.2.6 The documents submitted by the A-E shall be reviewed by the Harris Plant Engineering Section for engineering acceptance and/or comments. Reviews and comments will be obtained from the Quality Assurance Services Section when quality exceptions are noted in a recommended proposal. As a result of these reviews, one of the following courses of action shall be documented and transmitted to the A-E:

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- a. Approval is granted to proceed with the procurement as recommended.
- b. Approval is granted to proceed with the procurement as recommended following resolution of CP&L comments (engineering and/or QA).
- c. CP&L comments are to be resolved and a new recommendation submitted, if required.

3.2.7

Qualification of the Supplier selected for the procurement shall be accomplished by the A-E as required by the A-E's nuclear QA program and in accordance with the rules of the applicable Code.

Qualification shall be established prior to award of the Purchase Order. Records shall be maintained by the A-E that identify the selected Supplier, his facility, specified items or equipment which he is qualified to supply, and the date of survey or verification.

Qualification will be reviewed and approved by CP&L by one or more of the following means:

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






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- a. Receipt of Supplier verification that he holds an active Certificate of Authorization from the ASME to manufacture and Code-stamp the item(s) described in the inquiry.
- b. Evidence that Material Manufacturers or Material Suppliers hold a Quality System Certificate (Materials).
- c. Verification that the vendor is currently on the A-E's Approved Supplier's List.
- d. CP&L or A-E survey of the Supplier's facility to assess his capability to document and execute a QA program that meets the requirements of the inquiry, including verification that his technical capability, organization, facilities, and inspection measures are commensurate with requirements of the inquiry.

3.2.7.1 When an A-E survey is required, as determined above, the Manager - QA Services shall be advised by the A-E of the survey schedule with sufficient advance notice to participate, at his option.

3.2.7.2 The survey shall be conducted by the A-E and documented on a Manufacturer Evaluation Quality Assurance form (Exhibit 3-1) or equivalent. The evaluation form shall be submitted to CP&L for

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review which will summarize the results of the survey and state whether or not, in the opinion of the survey team, the Supplier is qualified and meets Code requirements.

3.2.8 If the Supplier is found not to be qualified, corrective action shall be implemented to qualify the Supplier; or a new Supplier shall be selected by re-examination of the bids or by resolicitation as set forth in Paragraphs 3.2.1 through 3.2.7.1 for the initial selection.

3.2.9 A Purchase Order shall be awarded to a qualified Supplier. The Design Specification and other applicable requirements of the inquiry shall be made a part of the Purchase Order. If the scope of supply or complexity of requirements so warrants, a preaward meeting shall be held by the A-E with the selected Supplier to assure that the requirements are understood. When a preaward meeting is held, a qualified spokesman for QA in the A-E's organization shall clarify QA requirements to assure that there are no misunderstandings. QA questions or concerns and their resolution will be documented. Award shall be withheld until QA requirements for the procurement

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are accepted by the Supplier. If as a result of the preaward meeting a revision is proposed to the Design Specification, the revision shall be prepared, reviewed, and approved for release as set forth in Section 2.0.

3.2.10

A Quality Compliance Plan for Vendors, Manufacturers, or Contractors (Exhibit 3-2) shall be documented and executed by the A-E for an awarded Purchase Order. The plan shall be submitted by the A-E to CP&L for review and approval by the Manager - QA Services prior to execution.

The compliance plan shall include provisions, as required:

- a. For in-process and final inspections (shop inspections) of Supplier items at the Supplier's work site when so specified. The inspections will be documented by the A-E and copies of the reports forwarded to the Manager - QA Services.
- b. For surveillance, as necessary, to assure that Supplier planning and execution of work are controlled in accordance with his approved QA program.

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During execution of the compliance plan, the Manager - QA Services shall be notified by the A-E of scheduled surveillance events at the Supplier's facilities. This notification will allow reasonable time for preparation and participation by CP&L when so directed by the Manager - QA Services.

3.2.11 Supplier documents required by the Design Specifications, which are made a part of the Purchase Order, will be reviewed and accepted by the A-E.

3.2.12 Purchase Order additions or modifications after award shall be reviewed and controlled the same as set forth for the original Purchase Order.

3.3 Site Procurement


3.3.1 The Project General Manager is responsible for controlling field purchase requisitions for Code items and services at the construction site as described in this Subsection.

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



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3.3.2

Field purchases shall be initiated by preparing a purchase requisition as detailed in the HPCS procedures on the requisitioning of materials and equipment. Items, quantities, delivery schedule, technical, and QA requirements will be included on the Purchase Requisition form (Exhibit 3-3) or in attachments as necessary. One of the following types of specifications shall be attached to or included with the Purchase Requisition.

- a. A-E generated Design Specifications distributed to the construction site in accordance with Section 2.0.
- b. Construction site-generated specifications consisting of engineering and quality requirements developed for the procurement. The specification shall be in accordance with applicable Code, regulatory requirements, design bases, and other requirements established for the plant items to which the procurement applies to assure adequate quality in the purchased items or services.

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3.3.3 The Purchase Requisition package shall be submitted to the Director - QA/QC, or his designee, for review to ensure inclusion of QA requirements prior to bid solicitation.

3.3.4 Proposals which contain technical differences, deviations, or exceptions submitted by bidders on Code items shall be technically reviewed and evaluated for conformance to procurement documents by the Engineering General Manager, Project General Manager, Discipline Managers, or their designees. Exceptions to QA requirements in the Supplier's proposal shall be referred by the evaluator to the Director - QA/QC for review and concurrence.

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3.3.5 For Code items Construction Procurement and Contracting Section shall request the QA qualifications of the Supplier selected for the procurement which shall be accomplished as required by this Manual and in accordance with Corporate Quality Assurance Department procedure on Supplier evaluation.

The requested QA qualification shall be established by the Manager - QA Services prior to award of the Purchase Order or Contract by one or more of the means detailed below:


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

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- a. Receipt of supplier verification that he holds an active Certificate of Authorization from the ASME to manufacture and Code-stamp the item(s).
- b. Evidence that Material Manufacturers or Material Suppliers hold a Quality System Certificate (Materials).
- c. Verification that the vendor is currently on the approved supplier's list.
- d. Survey of the Supplier's facility to assess his capability to document and execute a QA program that meets the requirements of the procurement documents, including verification that his technical capability, organization, facilities, and inspection measures are commensurate with requirements of the procurement documents.

3.3.5.1

When a survey is required, it shall be performed at the Supplier's facility and documented (e.g. on a Manufacturer Evaluation Quality Assurance form Exhibit 3-1) by the Quality Assurance Services Section. A report will summarize the results of the survey and state whether or not, in the opinion of the survey team, the Supplier is adequately qualified and meets Code requirements.

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3.3.5.2 QA approval of a Supplier will be documented in a memorandum by the Manager - QA Services Section and forwarded to the Construction Procurement and Contracting Section.

3.3.5.3 The Manager - QA Services shall be responsible for generating, maintaining, and controlling an Approved Suppliers List (ASL) for vendor's supplying ASME Code items. The listing shall include in tabular form:

- a. Name of supplier.
- b. Address of supplier.
- c. Types and description of materials, parts or services qualified to supply.
- d. Basis for qualification.
- e. Qualification expiration date.
- f. Restriction (if any) with regard to qualification.

At least once each month the Manager - QA Services shall revise the Quality Assurance Record Tracking System data base to reflect the addition of new suppliers qualified during the previous month, and the deletion of previously approved suppliers whose qualification has been terminated. This information will be summarized in a published memorandum.
















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Access to the ASL (via computer terminal) and distribution of the memorandum will be made to the Manager - Construction Procurement and Contracting, the Principal Buyer - Harris Project, and the Director - QA/QC - Harris Plant.

Additions to the list will be limited to vendors whose quality assurance programs have been evaluated and conform to the applicable requirements of this Manual. Termination shall be supported by appropriate records such as:

- a. Expiration of qualification date and no purchasing activity to support continued qualification.
- b. Failure of the supplier to maintain an adequate quality assurance program.

As occurring, the Manager - QA Services will prepare a memorandum to add or remove a qualified vendor, except for expiration of qualification date and/or no further interest by the procurement and contracts sections.

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3.3.5.4 The Quality Assurance Services Section shall maintain qualification records that identify the selected Supplier, the item to be furnished, and the date of QA qualification.

3.3.6 If the Supplier is found not to be qualified and resolution of the problem cannot be resolved before the start of work, a new Supplier shall be selected by re-examination of the proposals, or by resolicitation as set forth in this Subsection for the initial selection.














3.3.7 For procurement of Code items, a Purchase Order (Exhibit 3-4) shall be awarded by the Manager - Construction Procurement and Contracting or his designee to a Supplier on the Approved Supplier's List. For procurement involving labor services or a combination of labor services and Code items, a Contract shall be issued by the Manager - Construction Procurement and Contracting, or his designee, in accordance with NPCD procedures. The Purchase Order or Contract shall be awarded to the qualified and selected Supplier after resolution of any exceptions or deviations to the QA or technical requirements of the Purchase Requisition as detailed in NPCD

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procedures. The Design Specification or site-generated specification shall be made a part of the Purchase Order or Contract, as applicable. If the scope of supply or complexity of requirements so warrants, a preaward meeting may be held with the selected Supplier to assure that requirements are understood.

3.3.8 Purchase Order or Contract award shall be withheld until QA requirements for the procurement are resolved with the Supplier. If, as a result of the preaward meeting, a revision is proposed to the Design Specification or site-generated specification, the revision shall be prepared, reviewed and approved as set forth for the original specification.

3.3.9 The Manager - QA Services is responsible for a Vendor Surveillance Check Plan (Exhibit 3-5) to be documented and executed for an awarded Purchase Order as required for items manufactured in accordance with the Code. The surveillance plan shall include provisions, as required:

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- a. For in-process and final inspections (shop inspections) at the Supplier's work site. When specified, the inspection will be documented on a QC Inspection Report (Exhibit 3-6) and copies of the reports forwarded to the Director - QA/QC.
- b. For surveillance, as necessary, to assure that Supplier planning and execution of work at his work site is controlled in accordance with this QA program.
- c. As applicable, only a properly executed Release for Shipment form (Exhibit 3-7) by the CP&L Vendor Surveillance Specialist will release Supplier to ship items or equipment.

△ 3.3.10

The Engineering General Manager/Project General Manager/Discipline Managers shall be responsible for the review and control of Purchase Order or Contract additions or modifications involving the specifications concerning Code items and services. Additions or modifications, excluding commercial or quantity, will be reviewed by the Director - QA/QC, or his designee for QA requirements.

3.3.11


Engineering drawings, calculations, and special process procedures and revisions thereto submitted from a Supplier performing

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



engineering, which are received by the Principal Buyer - Harris Project or Manager - Construction Procurement and Contracting, are forwarded to the Harris Plant Engineering Section for their review and comment as detailed in the HPCS procedures on interface with the Harris Plant Engineering Section.

3.3.12

Engineering drawings, calculations, and special process procedures and revisions thereto, submitted from a Contractor who furnishes labor/related items and who performs engineering, are received by the Discipline Managers for review and approval and, if applicable, forwarded to the Harris Plant Engineering Section for their review and comment as detailed in the HPCS procedures on interface with the Harris Plant Engineering Section.

3.3.13

The Harris Plant Engineering Section will review Supplier submittals of documents pertaining to engineering when specific submittals are requested in the Purchase Orders or Contracts issued by NPCD. Comments by the Harris Plant Engineering Section will be provided to the Discipline Manager or to the Manager - Construction Procurement and Contracting. The Nuclear Engineering and Licensing Department

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contents of the Certified Material Test Report are correct and that all tests are in compliance with the requirements of the material specification and the Code and attach to the Material Manufacturer's original Certified Material Test Report. Material identification shall be described in the Certified Material Test Report.

All upgraded material shall be identified and marked, as required, in accordance with the Code. Additional marking and stamping shall be witnessed by QA/QC personnel. Material shall be received and inspected as described for purchased materials in Section 4.0 of this manual. Certified Material Test Report records and laboratory test reports, after completion, shall be sent to QA/QC personnel for review and retention in QA Records. QA/QC personnel shall submit the CMTR's to the ANI for review prior to use of the material.

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The Welding Manager who certifies material made from stock produced by a manufacturer whose Quality System Program has not been qualified under NA-3700 may accept the certification of the requirements of the material specification which must be performed during the melting and of the heat analysis from the manufacturer of the stock provided the requirements of (1) through (4) below are met.

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Inspection Report (Exhibit 4-1). Items inspected and accepted by QA/QC personnel shall be tagged/labeled by QA/QC personnel (Exhibit 4-2).

4.7



Nonconformances noted during receipt inspection shall be reported and controlled in accordance with Section 10.0 and the CQA procedure on nonconformance control. The QA/QC inspector shall place the item(s) in a QA/QC Hold or Reject status (Exhibit 4-2), as appropriate.

4.8

A receiving inspection package consisting of receiving inspection reports, Quality Releases and Supplier documentation shall be assembled by the QA/QC receiving inspector. Documents placed in the package shall be identified by marking with the appropriate QA number (purchase order and item number) to establish traceability. The package is then forwarded to the Director - QA/QC or his designee for review.

4.9

The Director - QA/QC or his designee will ensure that Supplier documentation for CP&L site-purchased items is reviewed for

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compliance with the Purchase Order requirements. The documentation will be identified to the item by a QA number and transmitted with the Records Review and Acknowledgement form (Exhibit 4-3) to QA Records for filing.

4.10 When an A-E or NSSS Quality Release (QR) or CP&L Release for Shipment is not received for an item, acceptability of the item shall be determined by review of the Supplier's certifications, manufacturing/fabricating records, and a physical receipt inspection performed per Paragraph 4.6 prior to release of the item to construction.

4.11 When conditions warrant, a Conditional Release Request (Exhibit 4-4) may be initiated to permit progression of work involving a nonconforming item awaiting resolution. The Conditional Release Request shall be processed and approved by the Project General Manager/Discipline Manager or General Manager, as applicable, and concurred with by the Director - QA/QC in accordance with CQA procedures and Paragraph 10.3.2(f) of this Manual on nonconformance control.



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4.12

The Records QA/QC Specialist or other designated individual shall review and verify the certification and/or manufacturing data packages for A-E purchased items for compliance to procurement documents. The Records QA/QC Specialist or other designated individual is responsible only to ensure completeness of NSSS Supplier packages and that the NSSS QA organization has provided certification of review and compliance to the Purchase Order for their Suppliers' data packages. The Records QA/QC Specialist or other designated individual shall indicate his review and acceptance of the package as required by the CQC procedure on receiving inspection and forward the package to QA Records for retention as QA records.

△ 4.13

When the manufacturing data package is not included with the item shipment, a suspense file for the item, identifying the missing manufacturing data package, will be maintained by the Director - QA/QC. If the data package is not received within the time specified by the purchase order or sixty days the item will be considered nonconforming and processed per Section 10.0.

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5.2 Process Control

5.2.1 Process control sheets are utilized to establish measures to assure that processes, including welding and heat treating, are controlled in accordance with the Code and are accomplished by qualified personnel using qualified procedures. Process control sheets contain checklists including the document numbers and revisions to which the process conforms, with space provided for reporting results of completion of specific operations. The checklists include spaces for Director - QA/QC signature and date and for signature, initials or stamp of the ANI for activities which he witnesses. Whenever process control sheets have to be revised, they shall be processed in the same manner as the originals.



5.2.2



The Discipline Managers utilizing specifications and drawings are responsible for initiating HPCS process control sheets. The Manager - Start-Up, utilizing specifications and drawings, initiates the Start-Up process control sheets.

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5.2.3 For fabrication and installation of Code items by welding, the Weld Data Report (Exhibit 6-7), the Tank Fabrication Weld Record (Exhibit 6-2) and the Safety-Related Instrumentation Weld Data Report (Exhibit 6-13) are the process control sheets as described in Section 6.0. For pipe spool fabrication/modification, the Pipe Spool Fabrication/Modification Record (Exhibit 5-9) is used to supplement the WDR as a process control sheet. These process control sheets are initiated by HPCS.



5.2.3.1 The Pipe Spool Fabrication/Modification Sheet (PSFMS) (Exhibit 5-4) is initiated by the Discipline Engineer to define the specific operations required and processes the PSFMS through Document Control. The Discipline Engineer routes the PSFMS with the Pipe Spool Fabrication/Modification Record (PSFMR) to the Director - QA/QC for review and insertion of hold points. The Director - QA/QC reviews the PSFMS and PSFMR and forwards it to the ANI who establishes his hold points and signs and dates the PSFMR to indicate reviews.



5.2.3.2 After review and insertion of QA/QC and ANI hold points, the PSFMS and PSFMR are returned by the Director - QA/QC to the Discipline

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5.2.4.2 After review for hold point applicability by QA/QC and ANI, the WTNW
 5 is returned by the Director - QA/QC to the Discipline Engineer, who
 5 is responsible for transmittal to the craft for initiation of work.

5.2.4.3 After completion of work, the WTNW shall be submitted by the
 responsible Discipline Engineer to the Director - QA/QC and ANI for
 acceptance review and sign-off.

5.2.5 For HPCS installation of Code items by bolting, the Flanged
 Connection Inspection Form (FCIF) (Exhibit 5-5) serves as the
 process control sheet.

5.2.5.1 The FCIF is initiated by the Discipline Engineer to define the
 specific operations required and forwards the FCIF and related
 drawings to the Director - QA/QC for review and insertion of hold
 points. The Director - QA/QC reviews the FCIF and forwards it to
 the ANI who establishes his hold points and signs and dates the FCIF
 to indicate review.

5.2.5.2 After review and insertion of QA/QC and ANI hold points, the FCIF is

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returned by the Director - QA/QC to the Discipline Engineer for development of the work package per Paragraph 5.2.8.

5.2.5.3

After completion of work, the FCIF shall be submitted by the Discipline Engineer to the Director - QA/QC and ANI for acceptance and sign-off.

5.2.6

To support the pressure tests to be performed by Start-Up personnel, Code items installed by bolting may have to be disassembled by Start-Up personnel prior to the pressure tests and then reinstalled by Start-Up personnel after the pressure tests. The Start-Up Flanged Connection Inspection form (SU FCIF) (Exhibit 5-7) serves as the Start-Up process control sheet for this action.

5.2.6.1

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The SU FCIF is initiated by the Start-Up Engineer to define the specific operations required and forwards the SU FCIF to the Director - QA/QC for review and insertion of hold points. The Director - QA/QC reviews the SU FCIF and forwards it to the ANI who establishes his hold points and signs and dates the SU FCIF to indicate review.


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



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 5.2.6.2 After review and insertion of QA/QC and ANI hold points, the SU FCIF is returned by the Director - QA/QC to the Start-Up Engineer for initiation of the work. The Director - QA/QC shall verify correct identification, tagging and storage of disassembled items.

 5.2.6.3 After completion of work, the SU FCIF shall be submitted by the Start-Up Engineer to the Director - QA/QC and ANI for acceptance and sign-off. The Director - QA/QC shall verify correct identification of the reinstalled items and document such action on the process control sheet:

 5.2.7 The process sheet for pressure tests performed by HPCS is the Pressure Test Record (Exhibit 9-6) and its controls are addressed in Section 9.0. The process sheet for pressure tests performed by Start-Up personnel is the Pressure Test Data and Witness form (Exhibit 9-7), and its controls are addressed in Section 9.0 of this Manual.

 5.2.8 For HPCS installed items, the Discipline Engineer has the

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responsibility of issuing a work package that is comprised of drawings and process control sheets to craft personnel. The work package defines the scope of the work and provides directions to the craft for accomplishment of the work. From this work package Code items are requisitioned by craft personnel from the warehouse or from the Pipe Fabrication Shop, which is established as a controlled storage area by use of the Construction Material Requisition form (Exhibit 5-1) for installation in the field. QA/QC verifies correct identification of the item and documents such action on the process control sheets. Changes to the process control sheets in the work package will be handled in the same manner as the original.

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5.2.9

Instrumentation tubing, prior to bending and installation, shall be qualified according to each material heat lot of tubing, size and type of bending tool. The preparation of the Qualification Record for ASME Code Class Tube Bending (Exhibit 5-10) shall be the responsibility of the Discipline Engineer who shall submit it to the Director - QA/QC and the ANI for establishment of hold points prior to qualification.


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








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 5.2.9.1 Installation of instrument tubing shall require that the process control sheet, Heat Number Transfer/Tube Bending Verification Sheet (HNT/TBVS) (Exhibit 5-11), be prepared by the Discipline Engineer. The HNT/TBVS shall be submitted by the Discipline Engineer to the Director - QA/QC and the ANI for verification of operations data, qualification of tubing, and inspection as required. Removal of completed instrument tubing installations for maintenance/testing purposes shall be in accordance with the SHNPP Start-Up Manual.

 5.2.9.2 Instrumentation tubing joints with threaded NPT connections shall require a process control sheet, Threaded Connection Inspection Sheet (TCIS) (Exhibit 5-13), to be initiated by the Discipline Engineer. The TCIS shall be submitted to the Director QA/QC and the ANI for review and establishment of hold points prior to issue.

 5.2.9.3 Instrumentation tubing joints involving welding shall require a process control sheet, Safety-Related Instrumentation Weld Data Report (SRIWDR) (Exhibit 6-13). The Welding Manager shall be responsible for preparation of the SRIWDR and submittal to the Director - QA/QC and ANI for review and establishment of hold points prior to issue.

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- 5.2.9.4** Instrument Tubing Joints including compression fittings, pipe fittings, instruments, instrument valves, pipe and tubing shall require a Material Verification Sheet (MVS) (Exhibit 5-14) to be initiated by the Discipline Engineer. The MVS shall be submitted to the Director - QA/QC and the ANI for the verification of materials by bill of material/heat-trace number/piece number/serial number.
- 5.2.10** After completion of operations involving qualification, bending fabrication and required inspection, the completed process control sheets shall be submitted to the Director - QA/QC and ANI for acceptance and sign-off.
- 5.2.11** Piping joints involving threaded connections shall require a process control record, Threaded Connection Inspection Report (TCIR) (Exhibit 5-12), to be initiated by the Discipline Engineer. The TCIR shall be submitted to the Director - QA/QC and the ANI for review and establishment of hold points prior to initiation of installation. After completion of the operations, the TCIR shall be submitted to the Director - QA/QC and ANI for acceptance and sign-off.

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2 5.2.15



It is the responsibility of the Project General Manager/Discipline Managers/General Manager/Director - QA/QC to assure that Code items are controlled as follows:

- a. Permanent labels, markings, or other identification shall be applied and documented to assure proper identification of the item and traceability to its material sources.
- b. Required identification and status markings shall be retained with the item until it becomes part of an assembly or installation. The identification of each item shall be included in the record of the assembly or installation.
- c. Materials applied in welding of Code items shall be identified and controlled as detailed in Section 6.0. Instructions shall be provided to ensure that specified materials are used. Records shall provide source traceability for welding materials used at the construction site in the fabrication and installation of Code items.
- d. Items tagged Hold or Reject shall be withheld from use or installation, except as provided for in Section 10.0.
- e. Material protection procedures shall be implemented to prevent damage or deterioration.

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







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5.3 Construction Procedures Development

5.3.1 The Discipline Managers are responsible for assuring that necessary construction procedures are developed; reviewed for adequacy; approved for release; and made available at construction site work areas. The Discipline Managers will provide construction procedures to QA/QC for review. QA/QC comments will be resolved prior to procedure release.

 5.3.2 It is the responsibility of the Project General Manager to maintain a current file of construction procedures.

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Construction procedures applied to control work associated with Code items will include the following information, when appropriate:

- a. Requirements for indoctrination, training, and skills.
- b. Prerequisites for special environments, equipment, tools, and material preparation.
- c. Instructions for data collection and reporting.
- d. Instructions for documenting work performed, results achieved, and requirements for retention of QA records.
- e. Requirements for verification of functional capability and quality by inspection, witnessing, examination, and testing, including designation of mandatory hold points.
- f. Quantitative and qualitative criteria for determining that important steps or functions have been satisfactorily accomplished.

5.4 Start-Up Procedure Development

5.4.1 The General Manager is responsible for assuring that Start-Up test procedures are reviewed for adequacy, approved for release, and made

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available at the test area. He will provide Start-Up procedures to the Director - QA/QC for review. QA/QC comments will be resolved prior to procedure release. It is the responsibility of the General Manager to maintain a current file of Start-Up procedures.

5.4.2

Start-Up procedures applied to control work associated with Code items will include the information, as applicable, listed in Paragraph 5.3.3.



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6.1 Procurement of Welding Material

6.1.1 Welding material used in the construction or repair of items or materials shall conform to the requirements of the Code as detailed in the Site Specification titled "Purchasing Welding Materials for permanent Plant Construction." Procurement shall be in accordance with this Manual as described in Subsection 3.3, "Site Procurement". The required material tests shall be conducted by the manufacturer for each lot of flux-cored or fabricated electrodes; for each heat of bare electrodes, rod, or wire for use with the site welding processes; and for each heat of consumable insert. Submerged arc welding is not used by CP&L under this program for site fabrication.

6.1.2 Purchase orders for weld materials shall include the welding material classification and shall require that testing and certification be performed to the test requirements per ASME Code NB2400 for each heat and/or lot of material in

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accordance with the latest mandatory addenda of the ASME Boiler and Pressure Vessel Code, Section II, Part C; and the 1974 Edition, 1977 Winter Addenda (or later edition) of ASME Section III. Tests, as applicable, shall include tensile tests; impact tests; heat treatment; and chemical analysis with all results to be recorded on the manufacturer's Certified Material Test Report (CMTR). Test coupons, as required by Code, shall be tested in the as-welded and post weld heat treated conditions as described in the Site Specification.

For austenitic stainless steel, the manufacturer shall certify the delta ferrite on the CMTR as determined by the use of an Aminco-Bremmer Magne-Gage or by a chemical constitution diagram in accordance with the ASME Section III Code. The delta ferrite and the method used to determine the delta ferrite shall be stated on the CMTR, and shall be a minimum of 5 to a maximum of 20.

2 6.1.3

Welding materials received from a manufacturer/supplier without proper certification or complete documentation records, as required by the Code, shall be tagged and placed on Hold Status in a

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controlled segregated area until the documentation has been received or corrected.

6.2 Welding Procedure Qualification

6.2.1 The Welding Manager is responsible for preparation, qualification, and approval of CP&L welding procedures used for nuclear power plant Code work. Welding procedures shall be qualified in accordance with ASME Code, Section IX, and shall meet the requirements of the ASME Code, Section III. The Director - QA/QC shall be notified of the procedure test schedule prior to the set-up and welding of the test assembly to allow QA/QC monitoring and documenting of the activity on a QA Surveillance report or checklist.














6.2.2 Welding Procedure Specification form (Exhibit 6-3) and the Procedure Qualification Record (Exhibit 6-4) shall be used to record actual welding parameters, test results and data as required by Code and shall be certified by the Welding Manager or his authorized representative. The Director - QA/QC shall sign these records after review against the applicable Code requirements. These records are

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submitted to the ANI for review through Document Control by the Welding Manager. The ANI may require requalification of weld procedures if he deems it necessary.

6.3 Qualification of Welders and Welding Operators

6.3.1 The Welding Manager is responsible for testing, qualification, and approval of the qualification for welders and welding operators qualified to perform welding on nuclear power plant Code items. Prior to performing any site welding, welders and welding operators will perform a welder qualification test(s) in accordance with ASME Section IX and approved Welding Procedure Specifications (W.P.S.). These tests will be performed in the Weld Test Shop under the responsibility of the Welding Manager. Each welder and welding operator successfully passing test requirements on the qualification test coupons will be certified by the Welding Manager on a Performance Qualification Test Record (Exhibit 6-6). This test record is submitted to Document Control. In addition, the welder qualification status will be listed in a Welder Qualification Status Report which is also transmitted to Document Control for issuance to

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the field for use by craft supervisors in the selecting of welders for welding assignments. The Welding Manager is responsible for compiling, each month, the current Welder Qualification Status Report of each welder and/or welding operator. The Status Report shall contain each welder's qualifications by WPS procedure number and the limitations according to welding process, diameter, thickness and position. Also, the report shall list the date which the three month welder qualification will expire if no welding has occurred within a three month period. The Welder Qualification Status Report shall also specify when the welder is extended an additional three months provided the welder has welded to some other welding process in the previous three month period. Copies shall be furnished by site Document Control to site welding supervision and the Director - QA/QC as required. Copies of the Welder Qualification Status Report and of the welder and/or welding operator Performance Qualification Test Record (Exhibit 6-6) shall be made available to the ANI through the Director - QA/QC.

6.3.2 Welders, including tack welders, and welding operators shall be qualified and certified by the Welding Manager or his designee in accordance with the EPCS procedure on qualifying welders and welding

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operators in accordance with the ASME Code, Section III and Section IX.

6.3.3



Each welder and welding operator who has been certified shall be assigned a welder symbol by the Welding Manager or his designee in accordance with HPCS procedure on qualifying welders and welding operators to identify the welds made by the welder. A log shall be maintained for welding symbols by the Discipline Welding Engineer. Upon termination, or loss of the symbol stamp the symbol stamp will not be reassigned to another welder for a period of one year.



6.3.4

Renewal of qualification of a welder or welding operator performance qualification is required:

- a. When a welder or welding operator has not used the specific process, i.e., metal-arc, gas, etc., for a period of 3 months or more; except when employed on some other welding process, the period may be extended to 6 months by the Welding Manager or
- b. When there is a specific reason to question his ability to make welds that meet the specification.



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Renewal of qualification for a specific welding process under (a) above may be made in only a single test joint (plate or pipe) on any thickness, position, or material to reestablish the welder's or welding operator's qualification for any thickness, position, or material for which he was previously qualified.



Only one extension of the welder's qualification can be granted based on the welding to another welding process before requalification is required.

6.3.5 If there is a specific reason to question the ability of the welder or welding operator to make welds to meet the requirements of the specification and Code, the Welding Manager, Director - QA/QC, or the ANI may require requalification before the welder or welding operator is permitted to continue on Code work.

6.4 Construction Welding

6.4.1 The Welding Manager shall be responsible for the selection of the welding procedure(s) to be used by the welders and welding operators

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by preparation of the pipe Weld Data Report (WDR) (Exhibit 6-7) or the Tank Fabrication Weld Record (TFWR) (Exhibit 6-2) or the Safety-Related Instrumentation Weld Data Report (SRIWDR) (Exhibit 6-13). Preparation is based on design drawings, specifications and site procedures. The Director - QA/QC reviews the WDR/TFWR/SRIWDR for essential requirements and mandatory hold points. The Director - QA/QC reviews the WDR/TFWR/SRIWDR and forwards it to the ANI who establishes his hold points and signs and dates the WDR/TFWR/SRIWDR to indicate review. The WDR/TFWR/SRIWDR is then returned by the Director - QA/QC to the Discipline Engineer, who is responsible for transmittal to the craft supervisor, along with the applicable drawing, for initiation of the welding activity. After completion of the work the WDR/TFWR/SRIWDR is submitted to the Director - QA/QC and the ANI for acceptance and sign-off.

6.4.2

Welding shall be performed by CP&L or contracted welders or welding operators. All welding personnel shall be qualified by CP&L to CP&L Welding Procedures Specifications of which preparation is the responsibility of the Welding Manager. All performance qualifications shall be performed under his supervision and all

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construction welding shall be accomplished to the qualified procedures. The Welding Manager shall have direct contractual control of the welding operation including authority to assign or remove welders and welding operators at his discretion.

6.4.3 Prior to assigning a welder the craft foreman/supervisor reviews the WDR and ascertains the required WPS, material, thickness, and diameter. Based on this review, a welder or welding operator is selected as listed in the Welder Qualification Status Report.

6.4.4 The craft foreman/supervisor shall prepare the Welding Material Requisition (WMR) (Exhibit 6-1) for welding materials required for Code work in accordance with the EPCS procedure for site welding material control. The requisition shall contain the type of material, welder to whom material is to be issued, welding procedure specification, and location to be used. The Welding Manager is responsible for issuing the controlled welding material. The weld material issue room attendant, at time of issue, shall enter the heat number of the welding material (or other identifying manufacturers number which is traceable to the material



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certification), quantity, date, time, and his signature on the WMR and retain a copy for his records. A copy of the WMR shall be maintained by the welder at his work station until he has used all materials issued or returned with the unused portion to the weld material issue room.

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6.4.5

Welding materials will be issued to a welder or welding operator for a shift. All coated electrodes shall be issued in portable heated ovens. Unused welding material shall be turned in to the welding material issue room at the end of the shift; however, spools of bare wire or fluxcore materials may remain with a welding machine until the weld(s) requiring the same grade and type of material are completed or all the material is used.

6.4.6

After opening sealed containers, coated electrodes shall be stored by the weld material issue room attendant in heated ovens in accordance with welding material Manufacturers' recommendations and the Code as detailed by the HPCS procedure on welding material

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control. Surveillance of ovens used for storage of coated electrodes will be conducted and documented on QA Surveillance reports by QA/QC inspectors in accordance with Harris Plant QA/QC Section procedures. Materials returned after issue shall be processed in accordance with material Manufacturers' recommendations and the Code as detailed by the HPCS procedure on welding material control.

6.4.7

The Director - QA/QC is responsible for notifying the ANI when a mandatory holdpoint is reached and for providing necessary inspections in accordance with Code requirements. Holdpoint inspections shall be accepted by the QA/QC welding inspector and ANI by signature or initials and date on the original WDR or Tank Fabrication Weld Record or the Safety-Related Instrumentation Weld Data Report prior to any work proceeding past that point.

6.4.8

The visual inspection of weldpreps, fitup, tack welds, root pass, cleanliness control, and final inspection will be performed by QA/QC inspectors as required by the Code and CQC procedures. If the QA/QC welding inspector observes an unacceptable in process condition requiring rework, he shall advise the responsible craft foreman/supervisor. It shall be the craft foreman/supervisor's responsibility to effect the necessary repair or rework.



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6.4.9 The welder identification symbol shall be applied by the welder, next to the weld joint, in accordance with HPCS procedures.

6.5 Repairs to Welds and Base Material

6.5.1 Unacceptable defects identified on the applicable inspection report(s) (Exhibits 6-8 through 6-11) shall be repaired in accordance with the Code as detailed by HPCS procedure on repair of base materials and weldments. The Director - QA/QC is responsible for notifying the ANI of planned repairs to Code work for his concurrence prior to initiation of such repairs. The ANI may establish holdpoints as deemed necessary.



6.5.2 The QA/QC welding inspector shall furnish information on the location of the defect requiring removal and repair on or adjacent to the weld and notify the Discipline Welding Engineer of the need to repair.

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Prior to the weld repair, the Discipline Welding Engineer is responsible to prepare a Repair Weld Data Report (RWDR) (Exhibit 6-12). The RWDR shall include instructions on the required preparation of the repair area, WPS, welding material, and inspection requirements. The RWDR will be submitted to the Director - QA/QC for review and establishing of hold points. The Director - QA/QC reviews the RWDR and forwards it to the ANI who establishes his hold points and signs and dates the RWDR to indicate review. The RWDR is then returned by the Director - QA/QC to the Discipline Engineer, who is responsible for transmittal to the Craft Supervisor, for initiation of the repair activity.

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6.5.3 The QA/QC welding inspector will be responsible for documentation of the pipe/storage tank weld repairs on a Repair Weld Data Report (Exhibit 6-12). For Code Classes 1, 2, and 3 base metal repairs, the QA/QC welding inspector will prepare a sketch of the repaired area, as required by the Code for QA records, showing location and size of the prepared cavity. The welding material identifications,

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the welding procedure identification, heat treatment records and reports of examination results shall be on the WDR/RWDR or shall be included in the WDR/RWDR package.

6.5.4 After the repair is completed, the repaired area shall be examined by the same method used to detect the original defect and by any additional NDE required by the Code.

6.6 Control of Welding Equipment

6.6.1 The welding equipment shall be given an operational check as required by the Welding Manager at intervals not to exceed three months in accordance with HPCS procedures. This operation check shall be performed with instruments calibrated at regular intervals and used in accordance with Section 8.0 of this Manual. Operation Check stickers are applied to the machines by the electrical craft personnel. Code work welding will be performed with welding equipment as detailed in HPCS procedure on welding equipment control.



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













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6.6.2 When a machine is found to be operating outside of the tolerance ranges as specified by procedure during operation check or QA monitoring, the Welding Manager is notified by receipt of the welding machine maintenance report or a QA nonconformance report. If the settings for amperage or voltage are out of tolerance, it is the responsibility of the Discipline Welding Engineer to determine if the condition was sufficient to affect quality, then investigate the location and use of the machine since its last operational check. Corrective measures shall be initiated by the Discipline Welding Engineer as deemed appropriate and accepted by QA and the ANI when a nonconformance is reported.

 6.7

Additional Process Control Forms

The Repair Weld Data Report Continuation Sheet (Exhibit 6-5) may be used when space is needed for additional hold points or remarks.

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7.0 HEAT TREATING

7.1 Description of System

Heat treating shall be performed in accordance with approved written procedures conforming to the Code and approved as described in HPCS procedures on heat treatment. The Welding Manager is responsible for preparation and approval of site procedures for heat treatment of Code items.

7.2 Construction Heat Treatment

7.2.1 The Welding Manager is responsible for reviewing design specifications, drawings and Code requirements and specifying heat treatment requirements in site procedures, WDR's, TFWR's and RWDR's. Manufacturers' records for items which require site heat treatment during fabrication, installation or repair shall be reviewed by the Discipline Welding Engineer or his designee to determine if prior heat treatment has been performed. The cumulative time at temperature for items will be considered prior to



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assigning a heat treatment procedure to ensure that total time at temperature or temperatures during postweld heat treatment of the material does not exceed the total accumulative time allowed by the Code.

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7.3

Calibration

Heat treating equipment, such as thermocouples, gauges, and recorders, shall be calibrated at regular intervals in accordance with Code requirements as detailed in HPCS procedures on heat treatment and Section 8.0 of this Manual.

7.4

Verification of Metal Temperature

7.4.1

Thermocouples must be attached to the item undergoing heat treatment at locations specified in HPCS procedures on heat treatment.

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7.4.2 The item undergoing heat treatment will have heating rates, holding time, and rate of cool down as required by Code and as described in the site heat treatment procedures.

7.5 Training

△ 7.5.1 The training of personnel performing heat treatment, indoctrination and qualification in heat treatment techniques and applicable HPCS procedures for Code work is the responsibility of the Welding Manager. Training shall be documented in accordance with Section 1.0 of this Manual.

△ 7.5.2 Records of qualifications will be maintained by the Welding Manager or his designee as part of personnel qualification records.

7.6 Construction Site Inspection

The Director - QA/QC shall be responsible for the review of heat treatment charts, verification of compliance with applicable procedures and Code requirements, and monitoring and inspection of

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heat treatment activities in accordance with CQC procedures on heat treatment control. He shall maintain records pertaining to heat treatment of Code items.

7.7 Records

7.7.1 Each heat treatment shall be documented by the operator. The record shall indicate time, temperature and date. The heat treatment record shall identify the heat treatment method used, the recorder number, and item or joint identification; and other pertinent data essential for traceability to the item shall be entered by the operator as required by HPCS procedures on heat treatment.

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7.7.2 The operator shall place his signature or initials and date on heat treatment records which shall contain the following minimum data:

- a. Heat treatment procedure and revision
- b. Time (a.m. and p.m.) and date
- c. Item and material specification

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- d. Holding temperature
- e. Holding time (hours)
- f. Rate of heating and cooling as required
- g. Operator name

△ 7.7.3

Records shall be forwarded by the Welding Manager to the Director - QA/QC or his designee for review and acceptance prior to transfer to the QA records vault. Records will be available through the Director - QA/QC to the ANI for review and acceptance.

7.8

Bending and Forming

7.8.1

No bending and forming of Class 1 materials will be performed at the construction site.

7.8.2

Bending of Code Class 2 and 3 instrument tubing shall be performed at the construction site by CP&L in accordance with the ASME Code. Section 2.0 describes the controls for procedure preparation and approval and Section 5.0 describes the process control sheets including QC/ANI interface as related to the instrument tubing bending qualification and installation operations.


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the process control documents. In the event that an instrument is found to be out of calibration, the calibration shop shall issue an Out of Calibration Notification form (Exhibit 8-7) to the Discipline Engineer/QA/QC Specialist of the area to which the instrument has been assigned. The Discipline Engineer/QA/QC Specialist through review of records shall identify and document on the Out of Calibration Corrective Action form (Exhibit 8-6) the activities and items for which the tool was used since the last valid calibration of the tool. A program will be implemented by the Discipline Manager to evaluate the suspect inspections, examinations and test results. The results of this evaluation will be documented by the Discipline Manager on the Out of Calibration Corrective Action form and shall be transmitted to the Director - QA/QC. Nonconformances, as necessary, will be processed by the Director - QA/QC per Section 10.



8.1.1.2

An instrument frequently found out of calibration shall be recalibrated on a shorter interval, or the instruments repaired or replaced. Calibration status and the next prescribed calibration date shall be shown on or with the instrument, except for pressure

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8.2 Records and Maintenance

8.2.1 △
2The Master Controlled Tool List (Exhibit 8-1) shall be maintained by the Discipline Manager for instruments within the scope of this Section. Maintenance shall include updating concurrently with addition of new instruments to the inventory.

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2A certification record form, Controlled Tool Recalibration Record (Exhibit 8-2), shall be maintained by the Discipline Manager to provide "date calibrated" and "due date" information. Records shall be maintained by the Discipline Manager for calibration of controlled instruments on a Calibration Data Form (Exhibit 8-3). These records shall contain, or have attached, pertinent data recorded in the calibration process.

8.2.3 A Calibration Sticker (Exhibit 8-4) shall be attached to each instrument under the calibration program except where size, shape, or condition prohibits. In the case where a sticker cannot be attached to the instrument, the sticker will be kept in the calibration shop and will be traceable to the unique identification marked on the instrument.


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9.1 Training, Qualification, and Certification

9.1.1 The Manager - QA/QC Harris Plant has the responsibility for staffing the QA/QC Section with personnel meeting appropriate Code qualification requirements. QA/QC Supervisors shall have the responsibility for personnel indoctrination and site training on related activities in their assigned areas of responsibility.

9.1.2 QA/QC inspection personnel shall be trained and qualified in accordance with Section 1.0 and CQA procedure on personnel training and qualification, except for NDE which is described in Subsection 9.3. The job performance of QA/QC inspection personnel shall be evaluated at intervals not to exceed two years.

9.1.3 QA/QC inspection personnel shall meet the physical requirements as set forth in CQA procedure on personnel training and qualification. QA/QC inspection personnel records shall be maintained by the Director - QA/QC.




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9.2 Inspections and Tests

9.2.1 The Manager - QA/QC Harris Plant, the Project General Managers/Discipline Managers, and the General Manager are responsible in their respective areas for determining and implementing the appropriate training and programs needed to qualify personnel for performing inspection and tests.

9.2.2 QA/QC inspection and test personnel shall be trained to perform appropriate inspections and tests to procedures approved by the Manager - QA/QC Harris Plant which are applicable to their areas of responsibility. They shall be trained in the proper preparation and control of inspection and test records.

9.2.3 Inspection and test personnel shall perform inspection and tests in accordance with approved procedures as specified on appropriate

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9.3 Nondestructive Examination (NDE)

9.3.1 Personnel performing NDE shall be indoctrinated, trained, qualified

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and certified in accordance with SNT-TC-1A (1975), the Code, and QA/QC procedures. The Principal QA/QC Specialist - NDE shall ensure that only qualified personnel are assigned to perform NDE.

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Procedures (written practice) for NDE training, qualification, and certification shall be prepared by a Level III and be approved by the Manager - QA/QC Harris Plant and shall address, as a minimum, the following:

- a. Scope.
- b. Nondestructive test method.
- c. Levels of qualification.
- d. Interrupted Service.
- e. Education, training, and experience.
- f. Training program.
- g. Examinations.
- h. Certifications and Recertification.
- i. Terminations.
- j. Physical qualification.

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9.3.2 Levels I and II personnel shall be qualified and certified by examination which will be administered by Level III personnel. Level III personnel will be qualified by examination administered by a Level III examiner and certified by the Manager - QA/QC Harris Plant.



9.3.3 In the event that no NDE Level III personnel exist within the CP&L organization, the services of an outside agency shall be contracted.

9.3.4 Training, qualification, and certification of Levels I, II, and III site personnel shall be in accordance with NDEP procedure on training, qualification, and certification of nondestructive examination personnel. These activities shall be administered to those NDE personnel whose specific jobs require appropriate knowledge of the technical principles for NDE to which they are to perform, monitor, or evaluate. Certification of NDE personnel shall be documented on a Certificate of NDE Personnel Qualification form (Exhibit 9-4). A separate certification form shall be prepared for each NDE method and level for which an individual is qualified.

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- 9.3.5 The maintenance of records for site NDE certified personnel shall be the responsibility of the Principal QA/QC Specialist - NDE.
- 9.3.6 Certified NDE personnel shall be recertified at least once every three years for each NDE discipline certified.
- 9.3.7 NDE may be performed by personnel qualified to Level I, but interpretation and evaluation of the results of NDE shall be performed by personnel qualified to Level II or III.
- 9.3.8 Service organizations for performing NDE shall not be employed.
- 9.3.9 NDE requests shall be initiated by QA/QC inspectors or responsible construction personnel, as applicable. Nondestructive Examination Request (Exhibit 9-5) shall be used. Reports for magnetic particle, liquid penetrant, ultrasonic, radiographic and leak test examinations (Exhibits 6-8, 6-9, 6-10, 6-11 and 6-14) will be prepared by the examiner and shall show the examination procedure, revision number, type of equipment used, the examiner name, signature, date, level of qualification, and results of the examination.

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9.5.8

The Discipline Managers are responsible for developing a pressure testing procedure, for those pressure tests performed by HPCS, to meet specification requirements for test parameters and controls. QA/QC inspection personnel will notify the ANI of all pressure tests so that he may witness as required by the Code. The QA/QC inspector will inspect all joints and areas of high stress during the test. Pressure tests shall be documented on the Pressure Test Record (Exhibit 9-6).

Prior to pressure testing, the Pressure Test Record shall be initiated by the Discipline Engineer and forwarded to the Director - QA/QC for review and assignment of hold points. The Director - QA/QC reviews the pressure test record and forwards it to the ANI who establishes his hold points and signs and dates the pressure test record to indicate reviews. Upon completion of the pressure test, the Pressure Test Record (Exhibit 9-6) is signed by the QA/QC inspector and the ANI to indicate acceptance of the test.

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9.5.9

The Manager - Start-Up is responsible for developing pressure test procedures, for those pressure tests performed by Start-Up, to meet specification requirements for test parameters and controls. QA/QC inspection personnel will notify the ANI of all pressure tests so that he may witness as required by the Code. The QA/QC inspector will inspect all joints and areas of high stress during the test. Pressure tests shall be documented on the Pressure Test Data and Witness form (PTD&W) (Exhibit 9-7).

Prior to pressure testing, the PTD&W form shall be initiated by the Start-Up Engineer and forwarded to the Director - QA/QC for review and assignment of hold points. The Director - QA/QC reviews the PTD&W form and forwards it to the ANI who establishes his hold points and signs and dates the PTD&W form to indicate review. Upon completion of the pressure test, the PTD&W form (Exhibit 9-7) is signed by the QA/QC inspector and the ANI to indicate acceptance of the pressure test.



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9.6 Code Data Report and Nameplate Stamping

9.6.1 2 The Director - QA/QC is responsible for the Data Reports. Data Reports shall be signed by the Director - QA/QC or the Superintendent - QC to certify compliance with the requirements of the Code. Certification will be based on verification of completeness of records addressed in Section 11.

9.6.2 Data Reports shall be submitted to the ANI by the Director - QA/QC for review and certify compliance with the requirements of the ASME Code, Section III. If required by the enforcement authorities having jurisdiction at the construction site, a National Board registration number will be filed with the National Board. One original and one legible copy of the Data Report shall be filed with the National Board.

9.6.3 The Director - QA/QC is responsible to assure that before a component or appurtenance is placed in service, the certified Data Report shall be filed with the enforcement authorities having jurisdiction at the construction site.

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9.6.4

National Board Serial Numbers shall be controlled, issued sequentially, and stamped on the nameplate by the Director - QA/QC or his designee. He shall maintain a record of issuance using a National Board Number Log giving the following information: National Board Number, Type of Item, Serial number (if different from the National Board Number), date stamped and date registered. The Director - QA/QC is responsible to ensure the N symbol stamps are controlled by procedure and applied to the items or nameplates attached to the items fabricated at the construction site when the following conditions are met:

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- a. CP&L holds a valid Certificate of Authorization for the fabrication or installation.
- b. The required Data Reports have been completed and certified.
- c. The ANI has authorized application of the stamp.

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10.0 NONCONFORMANCE AND CORRECTIVE ACTION

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10.0 NONCONFORMANCE AND CORRECTIVE ACTION

10.1 Scope

This Section sets forth requirements for identification, reporting, segregation, investigation, and obtaining resolution to nonconformances related to Code requirements.

Deficiencies in required documentation and violations of construction control and Start-up procedures shall be reported as nonconformances. Nonconformance control shall be maintained to prevent inadvertent use or installation that could degrade the quality of the nuclear plant.

The Manager - QA/QC Harris Plant is responsible for the implementation of the nonconformance control and corrective action program. He has the authority and responsibility to stop work related to a nonconforming item, deficiency, or unsatisfactory condition until corrective action can be accomplished.

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10.2 Reporting Nonconformances

10.2.1 When a nonconformance is identified at the construction site, the following action in accordance with the CQA procedure on nonconformance control shall be taken to prevent inadvertent use of the item.

- a. The QA/QC Specialist responsible for the Code item will be notified by the originator using a Nonconformance Report (NCR) (Exhibit 10-1). The originator will obtain the NCR number from the Director - QA/QC or his designee (who maintains the NCR Log) and enter the NCR number on the appropriate status tags. The NCR will be referenced on the Receiving Inspection Report, WDR or other appropriate process control documents.
- b. The item will be tagged/labeled (Exhibit 4-2) or identified by marking to identify its unaccepted status. For nonconformances identified during the installation process, the QA/QC Inspector shall indicate applicable "Limits of Hold" (e.g. may be installed, etc.) on the NCR Form and QA Hold Tags (when used). Site personnel shall comply with the limits in further processing the nonconforming item. Items under warehouse

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control shall require a Conditional Release (Exhibit 4-4) to allow issuance and/or installation of the item. The conditional release shall be entered in the Conditional Release Log.

- c. The item will be segregated, when practical. If size or bulk make this impractical, the location where the nonconforming item is stored may be designated a Hold area and adequately identified as such.
- d. Corrective action and disposition of the nonconformance will be reported by the Discipline Engineer on the NCR and a Corrective Action Report (CAR) (Exhibit 10-2), and, if necessary, attachments thereto.

10.2.2



The status of nonconforming items shall be clearly shown by tags, labels, markings or indicating status on process control documents. This status identification shall be retained with the item or in records traceable to the item during all phases of disposition and correction.

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10.2.3 The nonconforming item and NCR shall be reviewed by the QA/QC Specialist. If the nonconformance is confirmed, disposition and corrective action shall be determined and assigned as outlined herein. If the condition is determined not to be a nonconformance, the QA/QC Specialist will cancel the NCR by noting the basis for the cancellation in the "Review Comments" section of the NCR. The cancelled NCR shall be so marked, and retained on file in QA Records. The QA/QC Specialist will have the QA Status Tags/Labels changed, or removed. The cancelled NCR shall be noted in the NCR Log.

10.2.4 Contractor audit nonconformances and corrective action will be handled in accordance with Section 13.0 of this Manual.

10.2.5 When additional space is needed to write the description of a Nonconforming condition, Exhibit 10-3, QA/QC Report Continuation Sheet, may be used.

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10.3 Corrective Action

10.3.1

Disposition and corrective action taken by the Supplier or CP&L, as applicable, shall be determined and recorded by the applicable Discipline Engineer on the NCR and CAR. The Director - QA/QC shall indicate concurrence with the final disposition, cause, and preventive measures by signing and dating the "Final Review By" sections of the NCR and CAR. Corrective action will be documented on the CAR form and will include identification and documentation of the cause and action taken to preclude recurrence of the condition. Verification of disposition and corrective action, as specified on the NCR and CAR form shall be performed by the QA/QC inspector and documented by signing the NCR and CAR prior to closing.



10.3.2

Disposition options are:

- a. Reject the nonconforming item and obtain an acceptable replacement; i.e.,
 - 1) Return the item to the Supplier for replacement, or

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- 2) Scrap the item at the site and obtain a new item.
- b. Rework or repair the item at the site, or return it to the Supplier for rework or repair in accordance with approved procedures/instructions.
 - c. Accept the item for "use as is" (must meet the requirements of the Code).
 - d. Disposition for use in noncode application.
 - e. Accept the conforming unit(s) in a multiple-unit lot, and arrange for the Supplier or site personnel to initiate disposition for the remainder of the nonconforming lot.
 - f. Issue a Conditional Release Request (Exhibit 4-4) in accordance with CQA procedure to release the nonconforming item for specified, limited use or installation pending final disposition. This is a temporary disposition and does not resolve the nonconformance. The item is identified with a conditional release tag affixed by the QA/QC Inspector. The Conditional Release and NCR's shall be resolved prior to final testing. As an alternate to processing a Conditional Release, site personnel may comply with the "Limits of Hold" listed on the NCR Form and on the QA Hold Tags (Exhibit 4-2).

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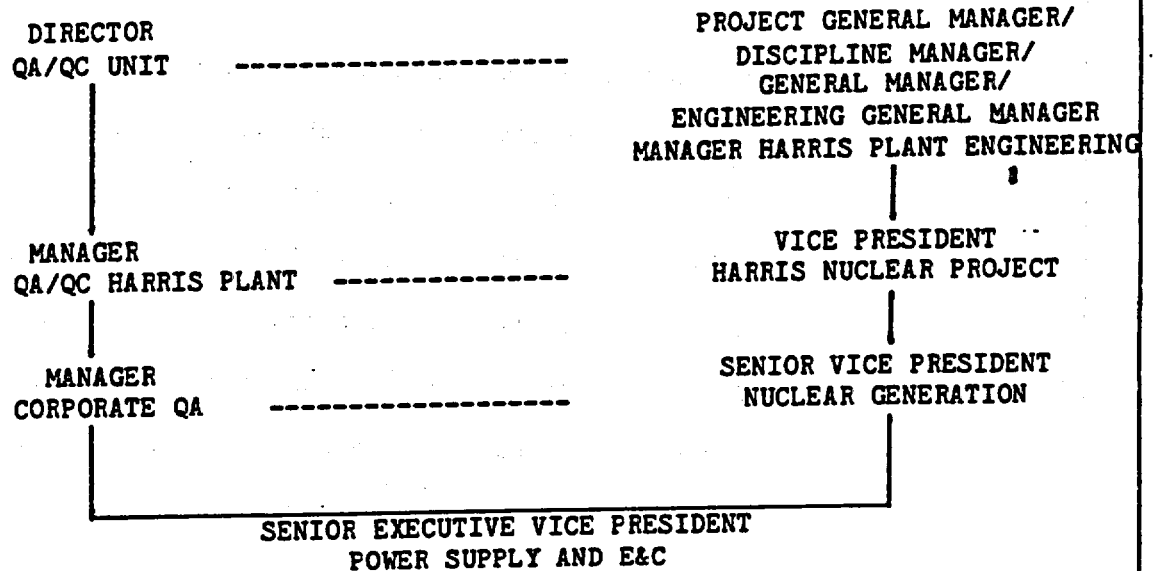
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6 10.3.3

In the event the Project General Manager/Discipline Managers/General Manager/Engineering General Manager/Manager Harris Plant Engineering and Director - QA/QC cannot agree on the corrective action or disposition, the chart for escalation below will be used until a resolution is reached.

6



----- Lines of Communication
_____ Escalation Chain

6 10.3.4

The Project General Manager/Discipline Managers, for HPCS activities, or the General Manager, for Start-Up activities or the

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CP&L

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Engineering General Manager for HPES activities is responsible for final disposition of nonconforming items. Scrapped items or materials shall be identified by a Hold Tag (Exhibit 4-2), promptly removed from work areas and controlled to prevent inadvertent use.

10.3.5 Rework and repair shall be controlled and documented as set forth in Sections 5.0 and 6.0 and CQA procedures.

10.3.6 If a nonconformance is detected at a Supplier's facility by CP&L Vendor Surveillance personnel, the Supplier shall be required to submit a Vendor Material Nonconformance Report (Exhibit 10-4) of equivalent to the Manager - QA Services. This report shall include sufficient detail to define the nature of the nonconformance, stage of manufacture, disposition and corrective action to prevent recurrence, unless it is a normal inherent production defect such as repairable surface imperfections.

10.3.7 Supplier's disposition and corrective action taken to resolve the nonconformance will be reviewed and evaluated by a Vendor Surveillance Specialist. Acceptance will be documented on the

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nonconformance report. The nonconformance report shall be included in the Supplier's documentation package.

10.4 Review of Nonconformance Report

10.4.1 Corrected items or documents shall be reinspected by a QA/QC inspector. Acceptance will be recorded in the applicable NCR and CAR as detailed in CQA procedure for nonconformance control and is the responsibility of the Director - QA/QC.

10.4.2 Records regarding the nonconformance, including documentation of the cause, disposition, and corrective action, shall be reviewed for completeness and compliance with the specification and the Code by the Director - QA/QC. If the documentation is accepted, the nonconformance report and CAR shall be closed out and the appropriate documents transferred to the QA records vault. The QA/QC inspector will remove the Hold tag and release the item for further processing.

10.4.3 The Manager - Corporate Quality Assurance is responsible for ensuring that NCR's are reviewed on a quarterly basis and a trend

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
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11.1 Responsibility













11.1.1 CP&L, Suppliers, and Contractors shall provide documents generated in their work that are designated by this Section for retention. Upon completion of work by Suppliers and Contractors, these records shall be transferred to CP&L or its agent unless, by contractual agreement, the Supplier or Contractor retains the records for CP&L for the required periods mutually agreed upon and as required by the Code.

 11.1.2 The applicable Manager/Director - QA/QC shall be responsible for the preparation of record checklists for systems and/or components; and the accumulation, identification, and review of documents in accordance with the appropriate procedures prior to filing as QA Records.

 11.1.2.1 The Director - QA/QC shall be responsible for the accumulation, control and storage of site documentation as defined herein until

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-  turnover to HPAS Document Control.
-  11.1.2.2 The Engineering General Manager shall be responsible for the control of design engineering documentation until turnover to HPAS Document Control.
-  11.1.2.3 The Manager - HPAS shall be responsible for the final accumulation, control and storage of site documentation.
-  11.1.3 The Manager - HPAS/Director - QA/QC is responsible for filing and maintaining records in accordance with site procedures on records filing. They shall restrict access to the records storage area to those authorized access by an approved list of personnel. They shall assure that no records will be removed from the storage area except when authorized by them or their designated representative. A record sign-out log shall be maintained by the Manager - HPAS/Director - QA/QC, or his designee.
-  11.1.4 The Principal Quality Assurance Specialist - Training and Administration shall be responsible for control and storage of

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quality assurance records, and other required documentation, for Corporate Quality Assurance Department (CQAD) general office personnel in accordance with CQAD procedures for document control and quality assurance records.

11.2

Record Index

Preparation of a record index shall be the responsibility of the applicable Manager - HPAS/Director - QA/QC to permit orderly filing and timely retrieval of records by personnel authorized access to these records. The index shall specify the location of records.

11.3

Accumulation and Maintenance of Records

11.3.1

A checklist of documents shall be prepared for each system and structure by the Manager - HPAS/Director QA/QC to ensure accumulation of required documents.



11.3.2

Supplier's manufacturing records for A-E and NSSS Supplier purchased items shall be reviewed by the Records QA/QC Specialist or other



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





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designated individual and transmitted to QA Records storage room with the Records Review and Acknowledgement Form (Exhibit 4-3) for retention. Suppliers' manufacturing records for site-purchased items will be reviewed by the responsible QA/QC Specialist and transmitted to QA Records with the checklist (Exhibit 4-3) for retention..

11.3.3 Receiving inspection records containing material certifications, manufacturing records, and QA releases shall be assigned a QA number by the QA/QC inspector for traceability to the item received.

11.3.4 Permanent records shall be retained for the lifetime of the plant. Permanent records shall include "as-built" sketches or a tabulation of materials identifying each piece of material with the certified Material Test Report and the coded marking; and other documents providing objective evidence of plant quality which meet one or more of the following criteria:

- a. Those which would be of significant value in demonstrating capability for proper functioning of Code items.


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












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- b. Those which would be of significant value in maintaining, reworking, repairing, replacing, or modifying the item.
- c. Those which would be of significant value in determining the cause of an accident or malfunction of an item.
- d. Those which provide required baseline data for in-service inspection.


11.3.4.1 The permanent record file shall contain documents required for quality assurance, fabrication, manufacturing, installation and traceability. The file shall contain such records of materials, manufacturing, examination and test data taken before and during construction, and the procedures, specifications, Stress Reports, and drawings used, fully identified by pertinent material or item identification numbers, revision numbers and issue dates. The file shall also include related data such as qualifications of personnel, procedures, equipment and related repairs.

 11.3.4.2 The Manager - HPAS/Director - QA/QC shall be responsible for designating the records to be maintained and shall ensure filing in a manner which will allow access by the ANI.

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Records retained by the Manufacturer or Installer shall be filed and maintained in a manner that will allow access by the ANI and CP&L or its agent to specific information contained therein.

 11.3.4.3

The Director - QA/QC shall be responsible for maintaining the following records on file until turnover to HPAS Document Control.



a. An index to the record file.



b. Data Reports for each part, component, appurtenance, piping system and piping subassembly. (Available as received from the supplier.)



c. Copies of appropriate Certified Material Test Reports.




d. "As-built" sketch or tabulation of materials.



e. NDE reports including final radiographs.



f. Heat treatment records.

 11.3.4.4













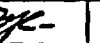


The Manager - HPAS shall be responsible for maintaining an index to the permanent record file and for maintaining the following records on file as received.



a. Those records defined in paragraph 11.3.4.3 b through f.



b. Certified Design Specifications.


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c. The Certified Stress Reports or Stress Calculations with verification regarding the applicability to the "As-constructed" condition. (Must have certification of owner's review and on file prior to application of the Code Stamp.)



d. "As-constructed" drawings certified as to correctness (must be on file prior to application of the Code Stamp).



11.3.4.5

The records at the site shall be filed and maintained in facilities that prevent deterioration or damage to documents and shall be controlled to prevent loss.


















11.3.4.6

The records shall be organized and filed by being attached in binders, placed in folders or envelopes or by being microfilmed so that each document is identifiable and retrievable.




Records which cannot be filed in binders, folders, envelopes or microfilmed will be filed in a suitable manner which will preclude deterioration of the records.

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
13.1 Corporate Audits

The Manager - QA Services has responsibility for Corporate QA audit activities as described in Section 1.0.

13.1.1 Training and Qualification of Personnel

13.1.1.1 The Manager - QA Services is responsible for the training and qualification of Corporate QA audit personnel. This is accomplished by assuring that Auditors and Lead Auditors are trained and qualified in accordance with the established requirements of Corporate Quality Assurance Department procedures on instruction for training and qualification of Corporate QA audit personnel. Auditors shall have no direct responsibilities in the areas they audit.

13.1.1.2 A personnel history file reflecting the records of each Lead Auditor's qualification (Exhibit 13-1), personnel history records,














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APPROVED										

and Audit Participation Record (Exhibit 13-2) is maintained in the Corporate Quality Assurance Department files.

13.1.2 Corporate Audit System

13.1.2.1 During the engineering, construction and start-up of a nuclear power plant, a comprehensive system of planned Corporate audits to determine the effectiveness of the engineering, construction and start-up QA program is carried out as detailed in Corporate Quality Assurance Department procedures on instruction for preparing, distributing, and maintaining the Corporate QA audit documents. This system shall be in accordance with the Code and delineated in Corporate Quality Assurance Department procedure for Corporate QA audits.

13.1.2.2 Audits shall be regularly scheduled on the basis of the status and importance of the activities to assure compliance with the Code and this Manual. The frequency of these audits shall be based on the areas of activity, amount of activity in progress, and the degree of criticality of the area involved. As a minimum, the entire program shall be audited annually.


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 13.1.2.3 Written Audit Reports shall document audit results and will identify nonconformances and provide sufficient associated information to enable appropriate corrective action to be taken.

 13.1.2.4 When the audit report requires corrective action to be taken, the applicable management is responsible for transmitting to the Manager - Quality Assurance Services, within thirty days after receipt of the audit report, a document describing the cause of the condition, corrective action taken or planned and schedule for completion of corrective action. A status of audits will be maintained by the Lead Auditor.

 13.1.2.5 Corrective and follow-up action associated with audits shall be determined and accomplished by the Lead Auditor and reported to the Manager - QA Services. Verification of completion of corrective action will be accomplished during the next scheduled audit of the activity or plant.

13.1.3 Management Review for Status and Adequacy


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


13.1.4.2 Audit reports covering activities associated with this Manual shall be made available to the ANI for review when so requested by him through the Director - QA/QC.

13.2 Supplier Audits

13.2.1 The Manager - QA Services has the responsibility to ensure that audit activities are planned, scheduled, coordinated and accomplished by trained and qualified personnel during the engineering, construction and start-up of nuclear power plants.

13.2.1.1 Training and Qualification of Personnel















13.2.1.1.1 The Manager - QA Services is responsible for the training and qualification of QA audit personnel. This is accomplished by assuring that Auditors and Lead Auditors are trained and qualified in accordance with the established requirements of Corporate Quality Assurance Department procedures on instruction for training and qualification of QA audit personnel. Auditors shall have no direct responsibilities in the areas they audit.

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13.2.1.1.2 A personnel history file reflecting the records of each Lead Auditor and Auditor's qualification, personnel history records, and audit participation record is maintained in the Corporate Quality Assurance Department files.

13.2.1.2 Supplier Audit System

13.2.1.2.1 Those organizations which are subject to the audit shall include the A-E, the NSSS Supplier and other Suppliers surveyed and qualified by CP&L. The A-E and NSSS Supplier audit frequency intervals shall be described in Corporate Quality Assurance Department procedures and shall be conducted at least once each twelve months. The total coverage of the applicable portions of the ASME Code NA-4000 shall be accomplished on a triennial basis. For Suppliers of Code items and/or services, audits are periodically scheduled at least every three years or once within the life of the contract, whichever comes first, to assure compliance with the approved QA program. The preaward source evaluation audit may suffice for the initial periodic audit. An annual evaluation shall be made to determine the necessity of increasing the audit frequency. Material Suppliers and


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
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Material Manufacturers not possessing the Quality System Certificate (Materials) shall be audited annually.

13.2.1.2.2 Audits shall be regularly scheduled on the basis of the status and nuclear safety importance of the activities to assure compliance with the developed and implemented program. The need for audits to maintain contractor qualification will be evaluated and determined by the Manager - QA Services and coordinated with the Principal QA Specialist - Performance Evaluation Unit. When corrective action is required, it shall be monitored to assure timely and effective results. Monitoring will include follow-up audits when appropriate.

13.2.1.2.3 Audits may be scheduled at any time at the direction of the Manager - Corporate Quality Assurance Department. Follow-up audits will be planned and conducted when necessary.

13.2.1.2.4 Audits shall be conducted using written procedures or checklists as guidelines. However, an auditor may depart temporarily from the guidelines when necessary to follow through in an area of concern to determine if a quality problem does exist.















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13.2.1.2.5 Audit planning shall include a review of previous audit reports for the area or activity to be audited.

13.2.1.2.6 Personnel shall be appropriately trained and indoctrinated to plan, conduct, and report audits. Auditors shall have no direct responsibilities in the areas they audit.

13.2.1.2.7 The audits will include an objective evaluation of the documented organization and Contractor's QA program for administrative control and the effectiveness of the implementation of the program in meeting the requirements of the applicable Purchase Order or Contract and the Code.

13.2.1.2.8 The audit report will be transmitted to the management of the activity audited. When the audit report requires appropriate corrective action to be taken, the applicable organization or Contractor is responsible for transmitting to the Manager - QA Services, within thirty days after receipt of the audit report, a document describing the cause of the condition, corrective action taken or being planned and schedule for completion of corrective

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action. Verification of completion of corrective action will be accomplished during the next scheduled audit or shop inspection whichever comes first.

13.2.1.2.9 Contractors have the responsibility for conducting audits of their QA programs and are responsible for auditing their subsuppliers.

13.2.1.3 Management Review for Status and Adequacy

13.2.1.3.1 Audit reports shall be distributed to the Senior Executive Vice President - Power Supply and Engineering & Construction, Senior Vice President - Nuclear Generation, Vice President - Harris Nuclear Project, Manager - Corporate Quality Assurance and to the management of the function or activity audited. The Manager - Corporate Quality Assurance shall sign and return preaward audit reports to the Manager - QA Services indicating his review. The Senior Executive Vice President - Power Supply and Engineering & Construction shall sign and return periodic audit reports to the Manager - Corporate Quality Assurance indicating his review.

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 Safety and Environmental Services. The management review report
 will be distributed by the Manager - Nuclear Safety and
 Environmental Services for review to the CP&L Chairman/President,
 Senior Executive Vice President - Power Supply and Engineering &
 Construction, Senior Vice President - Operations Support and the
 Manager - Corporate Quality Assurance. These reviews will be
 conducted in accordance with the "Procedure for Management Review of
 Quality Assurance Audit Activities," approved by the Executive Vice
 President - Power Supply and Engineering & Construction.

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14.0 REVIEW AND CONTROL OF MANUAL

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14.0 REVIEW AND CONTROL OF MANUAL

14.1 Responsibilities

14.1.1 The Manager - QA/QC Harris Plant is responsible for the revision of this Manual, as necessary, to maintain consistency with the applicable Code Edition and Addenda as stipulated in the Manual Addendum. The Manager - Corporate Quality Assurance will review the status and adequacy of this Manual and submit recommended revisions, as necessary, to the Manager - QA/QC Harris Plant. The Manager - QA/QC Harris Plant will submit proposed revisions to appropriate management for review and to the Senior Executive Vice President - Power Supply and Engineering & Construction for approval. This approval will be documented by his signature on the transmittal memorandum from the Manager - QA/QC Harris Plant. In the absence of the Senior Executive Vice President - Power Supply and Engineering & Construction, the approval will be by signature of the Senior Vice President - Nuclear Generation on the transmittal memorandum from the Manager - QA/QC Harris Plant.

14.1.2 Upon receipt of approval of the proposed revisions from either the Executive Vice President - Power Supply and Engineering &

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Construction or the Senior Vice President - Nuclear Generation, the Manager - QA/QC Harris Plant shall obtain the acceptance by the AIA per paragraph 14.3.1 and incorporate the revision(s) into this Manual and shall initial the "Approved" revision block on each revised page.

14.2 Distribution and Control of Manual

14.2.1 The Manager - QA/QC Harris Plant shall control distribution of this Manual, including those distributed to CP&L personnel, the ANI, and the Authorized Nuclear Inspector Supervisor. Copies shall be numbered, and issuance shall be controlled.

14.2.2 Each copy of this Manual shall be assigned to a specific individual and a record maintained on the QA Manual Distribution List (Exhibit 14-1) by the Manager - QA/QC Harris Plant, or his designee.

14.2.3 Each Manual shall be transmitted by letter (Exhibit 14-2), a copy of which is to be signed and returned acknowledging receipt of the Manual.

14.3 Revision

REVISION	0	1	2	3	4	5	6	7	8	9
BY	NJC	NJC	NJC							
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14.3.1 Revisions of this Manual shall be submitted to the Authorized Inspection Agency by a letter (Exhibit 14-3) by the Manager - QA/QC Harris Plant for review and acceptance prior to implementation. The acceptance copy of the letter (Exhibit 14-3) shall be furnished to the ANI by the Manager - QA/QC Harris Plant simultaneously with transmittal of revisions to the Manual.

14.3.2 Exhibits in the Manual may be changed without a revision to the Manual provided no information is deleted. Approval by the Manager - QA/QC Harris Plant, or Principal QA Engineer, is required. Print Shop form number addition/deletion is outside the scope of the manual. Revisions to the exhibits shall not conflict with the editorial sections of this manual.

Any organization change within CP&L that affects this Manual will be incorporated as a revision within sixty (60) days after effective date of the change.

14.3.3 When accepted by the Authorized Inspection Agency, revisions of this Manual shall be dated and forwarded by the Manager - QA/QC Harris Plant to individuals on the Distribution List by a form letter (Exhibit 14-4), a copy of which is to be signed and returned

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acknowledging receipt of the revision. The general revision numbers, which are consecutive and appear on the transmittal letter described in 14.3.1, will be identified on the Summary of Revision section. Specific revisions to each page shall be indicated with a △ . The specific revision number shall appear within the △ symbol, placed adjacent to the effected paragraph and also listed in the revision block at the bottom of each page. Only the latest specific revision number shall appear within the △ . Each time the manual is revised, a complete updated Summary of Revision section shall accompany the specific revised pages.

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14.3.4 Acknowledgement of receipt of revisions shall be returned to the sender no later than thirty days after date of distribution. Within forty-five (45) days after acceptance by the AIA the effective change will be implemented. Prior to implementation, classroom training or individual reading of the latest revision will be accomplished and documented. Procedures will be changed if applicable. Failure to acknowledge receipt of the revision by Manual holders other than CP&L shall result in a notification by letter (Exhibit 14-5). The Manager - QA/QC Harris Plant, or his

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designee, will maintain a copy of the letter until acknowledgement is received. The Manager - QA/QC Harris Plant and Manual Holders within CP&L shall be responsible to ensure that their Manuals are maintained current. Manuals found to be in noncompliance will be retrieved and the holder removed from controlled distribution, or the Manual will be updated.

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14.3.5

Holders of this Manual are responsible for acknowledging receipt of revisions thereto on the transmittal form letters (Exhibit 14-2 or Exhibit 14-4), for inserting revised pages into the designated sections, and for returning superseded pages. The returned acknowledgement receipt shall be retained by the Manager - QA/QC Harris Plant, or his designee, for a minimum of one (1) year or until the next revision whichever is longer.

14.3.6

A Summary of Revisions shall document revisions of all pages in this Manual. The Summary of Revisions shall be inserted in the front of this Manual. The Summary of Revisions shall also reflect the Section revised, page number, and revision number of each page of the Manual.

REVISION	0	1	2	3	4	5	6	7	8	9
BY	NJC	NJC	NJC	NJC						
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<u>EXHIBIT NO.</u>	<u>FORM NO.</u>	<u>REVISION NO.</u>	<u>TITLE OF EXHIBIT</u>
3-5	1538	0	Vendor Surveillance Check Plan
3-6	1539	0	Quality Control Inspection Report
3-7	1540	0	Release for Shipment
3-8		5/80	Purchase Contract Form
4-1	QA-7	5	Receiving Inspection Report
4-2		2	Quality Assurance Status Tags
4-3	QA-6	6	Records Review and Acknowledgement
4-4	QA-5	12	Conditional Release Request
5-1		1	Construction Material Requisition
5-2	QA-36	0	ASME Section III - Work Traveler - Non-Welding
5-3	QA-36A	0	ASME Section III - Work Traveler - Non-Welding Continuation Sheet
5-4		8	Pipe Spool Fabrication/Modification Sheet
5-5		7	Flanged Connection Inspection Form
5-6	QA-3	0	QA/QC Field Report
5-7	SU-18.1	12	Start-Up Flanged Connection Inspection Form
5-8			Delete

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BY	NJC	NJC								
DATE	6/24/85	11/25/85								
APPROVED										



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














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EXHIBIT NO.	FORM NO.	REVISION NO.	TITLE OF EXHIBIT
5-9		3	Pipe Spool Fabrication/Modification Record
5-10		1	Qualification Record for ASME Code Class Tube Bending
 5-11		1	Heat Number Transfer/Tube Bending Verification Sheet
5-12	QA-39	1	Threaded Connection Inspection Record
 5-13		1	Threaded Connection Inspection Sheet
 5-14		2	Material Verification Sheet
6-1	MP/3-1	5	Welding Materials Requisition
6-2	QA-32	1	Tank Fabrication Weld Record
6-3	MP/1-2	7	Welding Procedure Specification
6-4	MP/1-1	8	Procedure Qualification Record
6-5	QA-28A	0	Repair/Weld Data Report Continuation Sheet
6-6	MP/2-2	3	Performance Qualification Test Record
6-7	QA-28	5	Weld Data Report
6-8	PT-1	2	Liquid Penetrant NDE Report
6-9	MT-1	2	Magnetic Particle NDE Report
6-10	RT-1	2	Radiographic NDE Report

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



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<u>EXHIBIT NO.</u>	<u>FORM NO.</u>	<u>REVISION NO.</u>	<u>TITLE OF EXHIBIT</u>
6-11	UT-2	0	Ultrasonic Weld Examination Report
6-12	QA-30	3	Repair Weld Data Report
6-13	QA-40	0	Safety-Related Instrumentation Weld Data Report
6-14	LT-1	0	Vacuum Box Leak Test Report
8-1	APF-004	4	Master Controlled Tool List
8-2	APF-005	6	Controlled Tool Recalibration Record
8-3	APF-006	5	Calibrated Data Form
8-4	APF-009	1	Calibration Sticker
8-5	APF-007	6	Controlled Tool Log
8-6	APF-012	4	Out of Calibration Corrective Action Form
8-7		0	Out of Calibration Notification
 9-1	QA-47		Delete
 9-3	QA-49		Delete
9-4	QA PQ-6	1	Certificate of NDE Personnel Qualification
9-5	QA-37	3	Nondestructive Examination Request

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BY	NJC	NJC	NJC	NJC	NJC					
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<u>EXHIBIT NO.</u>	<u>FORM NO.</u>	<u>REVISION NO.</u>	<u>TITLE OF EXHIBIT</u>
9-6	QA-26	6	Pressure Test Record
9-7	SU-10.1	16	Pressure Test Data and Witness Form
10-1	QA-1	5	Nonconformance Report
10-2	QA-4	10	Corrective Action Report
10-3	QA-13	0	QA/QC Report Continuation Sheet
10-4		0	Vendor Material Nonconformance Report
10-5	QA-7A	0	Receiving Inspection Report
13-1	Ex. A	5	Qualification Requirements
13-2	Ex. B	5	Audit Participation Record
14-1		0	Quality Assurance Manual Distribution List
14-2		3	Form Letter (On Manual Distribution)
14-3		5	Form Letter (Distribution to ANIS or IS)
14-4		6	Form Letter (Distribution of Manual Revisions)
14-5		2	Form Letter (Notification of Late Acknowledgement on Distribution)

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DATE	4/29/83	1/12/84	7/3/84	10/17/84	3/21/85	4/24/85	6/24/85			
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2-SE-143-6W-512	yes	yes	DCS	6/3/82
2-SE-143-6W-513	yes	yes	DCS	6/3/82
2-SE-143-6W-514	yes	yes	DCS	6/3/82
5W-2-SE-143-1A	yes	yes	DCS	6/3/82
5W-2-SE-143-1B	yes	yes	DCS	6/3/82
5W-2-SE-143-2A	yes	yes	DCS	6/3/82
5W-2-SE-143-2B	yes	yes	DCS	6/3/82
5W-2-SE-143-3A	yes	yes	DCS	6/3/82

Maximum press. applied: 53 psi - Actual time at test pressure: 75 min.

Post test pressure. Gauge recalibration verified: DCS 6/3/82
 Initial: DCS

Welds stressed off on isometric drawings: DCS 6/3/82
 Initial: DCS

Test Inspected By:

JSSB
 OIA/C
6/3/82

Test Witnessed By:

JB Rella
 Authorized Nuclear Inspector
6/3/82

Reviewed & Accepted:

JST
 J. S. G. M. Davis
6/3/82

Witnessed By:

DLA
 DL
6/3/82

Approved by: DLA 6/3/82



CAROLINA POWER AND LIGHT COMPANY
SHARON HARRIS NUCLEAR POWER PLANT

Pressure Gauge
C.P.L.-R-1

HYDRO TEST FORM

DDR-1377
PAGE 08 OF 10

(Nuclear Safety Related) ASME Section III

Description of Pipe to be Tested: 12" SPENT FUEL - CLASS 3
System: SPENT FUEL - UNIT #2
3 SF12-174 SA-2 #3
3 SF12-171 SB-2 #3

ISO No.: 2-SF-1 rev. 1 ^{2/23} _{3/11/02}

Boundaries: ~~As shown on Isometric~~ ^{TP-30} From Puck # on 3 SF12-171 SA-2 #3
To cut out including 2 SF-1-FW-3

Drawing No.: ~~EBA-100 1364 6502 R2~~ ^{N/A} _{2/23 3/11/02} From Puck # on 3 SF12-174 SA-2 #3
To cut out including 2 SF-1-FW-3

Design Pressure: 150 psig Pressure to be held 10 min.: 187.5 psig

Pressure to be held during inspection: 150 psig

Maximum permissible pressure: 198.75 psig

FOR INFORMATION ONLY

1. All items in paragraph 4.2 of TP-30 completed.
2. Visual inspection of piping completed.
3. All items in paragraph 4.5 of TP-30 completed.

Initials
1-16-79
RE 1/16/79
RE 1/16/79
232 1-16-79

Hydro accepted by: Dick Fickler
Engineering and Construction QA Inspector Date 1/16/79

Hydro witnessed by: Jack M. Allen
AII Date 1-16-79

* N/A ^{NA} _{5-2-87 72}
Startup Unit Representative Date

* To be completed if witnessed (optional).

INCORPORATED ON
N-5
INITIALS JS DATE 3/6/02

JS
1/16/79

QA HYDROSTATIC INSPECTION FORM

LINE NO.: 3-SF-12-174 SA-283

ISO NO.: 2-SF-1
Rev. 12/192

SPOOL PIECE, VALVE TAG AND/OR EQUIPMENT NO'S.: F3-236-2-SF-1-4, F3-236-2-SF-1-6,
F3-236-2-SF-1-5

Water Temp: 54

Thermometer No.: 6890 -- 04532

Gage No.: 3-4

Calibration Date: 1-09-79

Gage recalibrated after hydro and found satisfactory: YES NO

Weld No.'s inspected: 2-SF-1-FW-4, 2-SF-1-FW-5, SW-2-SF-1-1A, SW-2-SF-1-5A,
SW-2-SF-1-6A, SW-2-SF-1-6B, SW-2-SF-1-6C

Comments: HYDRO WAS SATISFACTORY

FOR INFORMATION ONLY

[Signature]
QA Inspector
Date: 1/12/79

CAROLINA POWER AND LIGHT
SHEARON HARRIS NUCLEAR POWER PLANT

Page 3 of 3
DDK-1347
PAGE 10 OF 10

QA HYDROSTATIC INSPECTION FORM

LINE NO.: 3SF12-171 SB -243

ISO NO.: 2-SF-1 Rev. 1
3/11/82

SPOOL PIECE, VALVE TAG AND/OR EQUIPMENT NO.'S.: F3-236-2-SF-1-3, F3-236-2-SF-1-2

Water Temp: 54

Thermometer No.: C4532

Gage No.: 94

Calibration Date: 1-9-77

Gage recalibrated after hydro and found satisfactory: YES NO

Field No.'s inspected: SW-2-SF-1-1B, 2-SF-1-FW-1, SW-2-SF-1-1A, SW-2-SF-1-2A
3SF-1-FW-2, SW-2-SF-1-3D, SW-2-SF-1-3A, SW-2-SF-1-3B, SW-2-SF-1-3C

Comments: HYDRO WAS SATISFACTORY!

FOR INFORMATION ONLY

Pink-Ishtar
QA Inspector 1/1/82
Date



ALL-STATE LEGAL 800-222-0610 ED11-AC RECYCLED

QA-26
2/4/82
Rev. 2

CAROLINA POWER & LIGHT COMPANY
CORPORATE QUALITY ASSURANCE DEPARTMENT
HYDROSTATIC TEST RECORD
(Procedure CQC-22) *P/2*

Page 1 of 2
Corrected *CC* Initial *7.K.* Date *9/8/82*

Unit No. *2/9* System *SPENT FUEL* Turnover No. *1-7110-54*

Drawing No. *2166-G-413* Rev. *6* Code Class *3*

Isometric(s) *2-SF-144 RELO LINE # 3-SF12-1765B-2/3*

Test Boundaries *FROM 2-SF-144 FW-515 TO SPENT FUEL*

LINER RING WELD AND ALL WELDS BETWEEN

Design Press. *25* psi Maximum Press. (of lowest component) *188* psi

Test Press. *32** psi Minimum Time at Test Press. *10* min.

Hold Press. *25* psi TEST MEDIUM *WATER*

Prepared By: *SEE FCR-P-254* Verified By: *[Signature]*

[Signature] *3/3/82*
Mech. Discipline Engineer Date

[Signature] *3/25/82*
Mech. QA/QC Specialist Date

COMPONENTS

Ident. No.	Mfg./Fabrication Records Accepted	Open DDR's/NCR's	Verified By: (Initials & date)
<i>2-SF-144-1</i>	<i>YES</i>	<i>NO</i>	<i>TD 3-10-82</i>
<i>2-SF-144-2</i>	<i>YES</i>	<i>NO</i>	<i>TD 3-10-82</i>
<i>2-SF-144-3</i>	<i>YES</i>	<i>NO</i>	<i>TD 3-10-82</i>

INCORPORATED ON
N-5

INITIALS *DLS* DATE *6/2/82* PRE-TEST CHECK-OFF

- Openings, except fill & vent points, plugged Sat *[Signature]* Unsat. _____
- System filled; high points vented Sat *[Signature]* Unsat. _____
- Items not to be tested disconnected/isolated Sat *[Signature]* Unsat. _____
- Surfaces to be inspected clear & unobstructed Sat *[Signature]* Unsat. _____
- Test medium temp. *56* °F (minimum 50 °F) *[Signature]*
- Thermometer/Pyrometer No. *C.P.L.L. 4990B* Date Calibrated *3-22-82*
- Press. Gauge No.'s *4689B* Date Calib. *3-26-82* Range *0* to *60*

2-SF-144 1-7110.M.1

0075391002

Ident. No.	Weld Data Records Complete	Shown On Isometric	Visual Leakage Inspection	
			Int'l's	Date
✓ 2-SF-144-FW-515	YES	YES	TD	3-26-82
✓ 2-SF-144-FW-516	YES	YES	TD	3-26-82
✓ 2-SF-144-FW-517	YES	YES	TD	3-26-82
SW-2-SF-144-1A	YES	YES	TD	3-26-82
SW-2-SF-144-1B	YES	YES	TD	3-26-82
SW-2-SF-144-2A	YES	YES	TD	3-26-82
SW-2-SF-144-2B	YES	YES	TD	3-26-82
SW-2-SF-144-2C	YES	YES	TD	3-26-82
SW-2-SF-144-3A	YES	YES	TD	3-26-82
SW-2-SF-144-3B	YES	YES	TD	3-26-82
SW-2-SF-144-3C	YES	YES	TD	3-26-82
SW-2-SF-144-3D	YES	YES	TD	3-26-82
SW-2-SF-144-3E	YES	YES	TD	3-26-82
SW-2-SF-144-3F	YES	YES	TD	3-26-82
SW-2-SF-144-3G	YES	YES	TD	3-26-82

APC STRIKE FOUND ON WELD SEC DOC 89
 CLOSED 6-3-82

Maximum press. applied 43 psi - Actual time at test press. 11 min.

Post test press. gauge recalibration verified: TD 3-29-82
 Initials & Date

Welds signed off on isometric drawing: TD 3-29-82
 Initials & Date

Test Inspected By:
Tommy Hillert 3-29-82
 QA/QC INSPECTOR Date

Test Witnessed By:
J B Rhodes 6/4/82
 Authorized Nuclear Inspector Date

Reviewed & Accepted:
[Signature] 6/4/82
 Mech. QA/QC Specialist Date

Witnessed By:
N/A 6/4/82
 Harris Startup Group Date

Optional at the discretion of the Harris Startup Group

ALL-STATE LEGAL 800-825-0910 ED11-AC RECYCLED



Line #

3SF12-5SA-1&4
3SF12-6SB-1&4
3SF12-174SA-1&4
3SF12-171SB-1&4
3SF12-179SA-1&4
3SF12-176SB-1&4
3SF12-6SB-2&3
3SF12-5SA-2&3
3SF12-174SA-2&3
3SF12-171SB-2&3

Spool P/c#

1-CF-10-1
1-SF-10-3
1-SF-132-1
1-SF-32-2
1-SF-133-2
1-SF-133-4
2-SF-8-3
2-SF-8-4
2-SF-159-1
2-SF-159-2

Date Lines were Hydr.

2/21/79
3/13/79
11/5/79
11/8/79
9/17/79
9/20/79
7/19/79
7/24/79
12/9/81
12/8/81

CORRECTIVE ACTION REPORT
(Procedure CQC-2)

DDR No. 794
Issue No. 1/21/82
Page 1 of 3

Proposed Disposition:

- Repair Rework Reject (Return to Vendor) Reject (Scrap) Permanent Waiver (Accept-as-is)
 Upgrade Code Certification Downgrade Item Other (describe below)

Details: THE TEN SPOOL PIECES LISTED MEET THE REQUIREMENTS OF ASME III DIVISION I ND-4435 (a) THROUGH (c). REVIEW OF THE DATA PACKAGES ALSO INDICATE VISUAL EXAMINATION WAS PERFORMED. WELDS DO NOT REQUIRE VISUAL EXAMINATION DURING HYDROSTATIC TESTING. SEE ATTACHED LETTER FROM LUMBERMENS MUTUAL CASUALTY CO FOR JUSTIFICATION.

Recommended By:

Approved By:

St. A. Burt
Discipline Engineer

5/12/82
Date

E. E. Williams Jr. AML
Site Mgr/Sr. Res. Eng./Mgr. HPES

5/17/82
Date

Corrective Action and Final Disposition:

Documented Cause & Preventive Measures required:

Yes

No

G. L. Fairbank 1/22/82
Signature Date

Details: SEE ABOVE. HYDROSTATIC TESTING OF PLATE RINGS TO BE PERFORMED WITH SYSTEM HYDRO AFTER TURNOVER TO NDD START-UP GROUP.

Cause: Pieces were embedded without hydro test because to fast construction and sur 5/17/82 procedures did not specifically require hydro test these attachment welds. specify hold points for

Preventive Measures:

With interpretation of code provided by Lumbermens Mutual Casualty Co. site practice will be to not hydro these attachment welds prior to hydro system.

Approved By:

St. A. Burt
Discipline Engineer

5/12/82
Date

E. E. Williams Jr. AML
Site Mgr/Sr. Res. Engr./Mgr. HPES

5/17/82
Date



APR 1982
RECEIVED
CP & L CO.
Lumbermens Mutual Casualty Company
American Manufacturers Mutual Insurance Company
American Protection Insurance Company

Suite 102, Wexford Professional Building, 11676 Perry Highway, Wexford, Pennsylvania 15090 - 412/935-5811

April 22, 1982
Carolina Power & Light Co.
P. O. Box 1551
Raleigh, N. C. 15024

Attention: Mr. N. J. Chiangi, Manager
Engineering and Construction QA/QC

Regarding: Class 3 piping with welded rings buried in concrete

Dear Tal:

Our site resident Authorized Nuclear Inspector, Tim Rhodes, submitted a Technical Inquiry (#1344) on 2/22/82 with regard to the noted subject matter. Reiterated below is the problem statement with my recommended solution:

Problem Statement:

There are some Class 3 piping subassemblies with rings fillet welded to the outside of the pipe. All fillet welds are 1/2" leg. The pipe including rings are buried in concrete and have not yet been hydrostatically tested.

Respondent's Recommendation:

It is recognized that the rings are utilized for locating in concrete and neither the rings nor the fillet welds attaching them to the spool piece are pressure retaining. Since the Code allows attachment welding after testing, it is my recommendation that these welds are not required to be examined during hydrostatic test. However, the requirements for welding attachments (ND-4435) must be complied with.

If you require any further information, please don't hesitate to contact me at this office.

Respectfully submitted,

LUMBERMENS MUTUAL CASUALTY COMPANY

Robert V. Wielgoszinski

Robert V. Wielgoszinski
Authorized Nuclear Inspector
Appalachian Region
Special Inspection Services
Loss Control Engineering Department

E & C QA	
APR 26 1982	
Route To	INITIALS
NJC	9/24
ZET	
DJM	
WJM	
TJG	
RVA	

SHNPP SITE OAO/OC UNIT ROUTING					
INFO	CC	ACTOR	DISCIPLINE	DATE	CAT
			Director		
			Support		
			IDE		
			CA		
			MAN/INSTR		
			MECH/WRG		
			CRP		
			SCRIP		
			CC: R/V Samplers		
			INSTR/INSTR		

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