

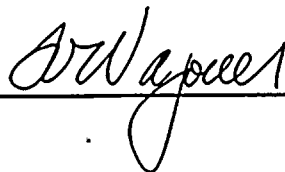
CP&L**NGG PROGRAM MANUAL****Title: Nuclear NDE Manual****Lead Department: NUCLEAR ENGINEERING DEPARTMENT****Program Manual
Number:
NGGM-PM-0011****Revision
Number:
0****Effective Date:

February 15, 1999****Revision Summary:**

This initial issue of this Program Manual is a conversion from the Corporate NDE Manual of Procedures to the NGG Procedure Hierarchy as the Nuclear NDE Manual.

1. The Table of Contents describing the status of NDE procedures has become the controlling document.
2. The individual personnel qualification and certification and procedure development and qualification procedures in the Corporate NDE Manual of Procedures have been consolidated into one procedure to form the process description for the Nuclear NDE Manual and is numbered NDEP-A.
3. To ensure smooth transition for users of the Nuclear NDE Manual, the following steps were taken:
 - The individual inspection and examination procedures in the Corporate NDE Manual of Procedures have retained their same title and number with slight change to four digit format.
 - Procedures were revised to meet requirements of PRO-NGGC-0201, Procedure Writers Guide.
 - Recent code requirements were incorporated.
 - Existing Interim Procedure Changes were incorporated.
 - Fossil and unneeded nuclear procedures were retired
 - Revision numbers were incremented by 1
4. The NDE Forms are provided as a separate Appendix in a manner similar to the previous Manual. Slight form revisions were made and the revision numbers were incremented by one.

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Rev. 0

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Table of Contents

Number	TITLE	Effective Revision	Interim Change	Two Year Review
NUCLEAR NDE MANUAL				
PROCESS PROCEDURES				
NDEP-A	Nuclear NDE Procedures and Personnel Process	0	None	12/1/00
EXAMINATION PROCEDURES				
100 SERIES - RADIOGRAPHIC METHOD				
NDEP-0101	Radiographic Examination	16	None	12/1/00
NDEP-0102	Radiographic Examination for AWS	Retired 01/16/98		
NDEP-0103	Radiographic Examination of Castings	Retired 01/16/98		
NDEP-0104	Radiographic Examination for Fossil Power Plants	Retired 2/15/99		
NDEP-0105	Radiographic Examination of Welder Qualification Test Assemblies	7	None	12/1/00
NDEP-0107	Radiography for 1989 Edition Including All Addenda Through 1995 with 1996 Addenda ASME Code at Nuclear Power Plants	3	None	12/1/00
NDEP-0108	Radiography for "R Stamp"	1	None	12/1/00
NDEP-0109	Digitization of Radiographic Images	Retired 2/15/99		
200 SERIES - PENETRANT METHOD				
NDEP-0201	Liquid Penetrant Examination (visible dye, solvent removable)	22	None	12/1/00
NDEP-0202	Fluorescent Penetrant Examination	9	None	12/1/00
NDEP-0203	Water Washable Penetrant Examination	7	None	12/1/00
NDEP-0204	High Temperature Liquid Penetrant Examination (Visible Dye, Solvent Removable) 90E - 200EF	Retired 3/25/94		
300 SERIES - MAGNETIC PARTICLE METHOD				

Number	TITLE	Effective Revision	Interim Change	Two Year Review
NDEP-0301	Magnetic Particle Examination (dry powder, prods and yoke)	13	None	12/1/00
NDEP-0302	Magnetic Particle Examination (dry powder, coil or cable wrap)	6	None	12/1/00
NDEP-0303	Wet Magnetic Particle Examination	11	None	12/1/00
NDEP-0304	Not Used			
NDEP-0305	Wet Fluorescent Magnetic Particle Examination of TDI Delivery Valve Assembly Bodies	Retired 2/15/99		
400 SERIES - ULTRASONIC METHOD				
NDEP-0401	Not Used			
NDEP-0402	Ultrasonic Examination of Welds (ASME)	Retired 01/16/98		
NDEP-0403	Digital Ultrasonic Thickness Measurement (D-Meter)	Retired 9/3/93		
NDEP-0404	Ultrasonic Examination of Plate (Longitudinal Wave)	Retired 2/15/99		
NDEP-0405	Ultrasonic Examination of Welds (AWS D1.1)	Retired 10/6/95		
NDEP-0406	Ultrasonic Mapping of Anchor Bolt to Embed Plate Welds	Retired 2/15/99		
NDEP-0407	Digital Ultrasonic Thickness Measurement (DIGI-SONIC 502)	Retired 9/3/93		
NDEP-0408	Ultrasonic Thickness Measurement (A-Scan)	10	None	12/1/00
NDEP-0409	Ultrasonic Examination of Forgings and Bars	Retired 9/3/93		
NDEP-0410	Digital Ultrasonic Thickness Measurement (NOVA 201)	Retired 2/15/99		
NDEP-0411	Digital Ultrasonic Thickness Measurement (KBI DM LCD or LED)	Retired 2/15/99		

Number	TITLE	Effective Revision	Interim Change	Two Year Review
NDEP-0412	Ultrasonic Examination of Thermowells and Gamma Plugs	Retired 2/15/99		
NDEP-0413	Digital Ultrasonic Thickness Measurement, Krautkramer-Branson Model DM2E	1	None	12/1/00
NDEP-0414	Ultrasonic Examination of Babbitted Bearings	2	None	12/1/00
NDEP-0415	Digital Ultrasonic Thickness Measurement (Model CL204)	5	None	12/1/00
NDEP-0416	Ultrasonic Examination of Plate Material (Angle Beam)	Retired 01/16/98		
NDEP-0417	Digital Ultrasonic Thickness Measurement - Krautkramer Branson DME DL	1	None	12/1/00
NDEP-0418	Not Used			
NDEP-0419	Ultrasonic Examination of Butt Welds	4	None	12/1/00
NDEP-0420	Ultrasonic Examination of Studs	4	None	12/1/00
NDEP-0421	Ultrasonic Examination of Welds (ASME VIII)	Retired 2/15/99		
NDEP-0422	Ultrasonic Examination of Pipe and Tubing	Retired 2/15/99		
NDEP-0423	Ultrasonic Examination of Embedded Type Wedge Anchors to Determine Length	Retired 2/15/99		
NDEP-0424	Ultrasonic Examination Using Cylindrically Guided Wave Technique	Retired 2/15/99		
NDEP-0425	Ultrasonic Examination Procedure for Piping Systems	2	None	12/1/00
NDEP-0426	Ultrasonic Test Sizing of Planar Flaws	1	None	12/1/00
NDEP-0427	Digital Ultrasonic Thickness Measurement (Panametrics Model 26DL Plus)	3	None	12/1/00
NDEP-0428	Ultrasonic Examination of Accumulator Tank Nozzles (H. B. Robinson Unit 2)	1	None	12/1/00
NDEP-0429	Ultrasonic Examination of Piping Systems for H.B. Robinson, Unit 2	2	None	12/1/00
NDEP-0430	Ultrasonic Examination of Diesel Engine Cylinder Liners (Harris Plant)	1	None	12/1/00

Number	TITLE	Effective Revision	Interim Change	Two Year Review
NDEP-0431	Calibration of A-Scan Ultrasonic Instruments	1	None	12/1/00
NDEP-0432	Manual Ultrasonic Examination of Pressure Retaining Vessel Welds 2" and Less in Thickness	2	None	12/1/00
NDEP-0433	Procedure for Manual Ultrasonic Examination of Bolting Greater Than Two Inches Diameter	2	None	12/1/00
NDEP-0434	Ultrasonic Examination of Ferritic Welds in Ferritic Pipe (ASME V)	1	None	12/1/00
NDEP-0435	Ultrasonic Thickness Measurement - NOVA 800+	1	None	12/1/00
NDEP-0436	Manual Ultrasonic Examination Of Similar And Dissimilar Metal Piping Welds	0	None	12/1/00
500 SERIES - EDDY CURRENT METHOD				
NDEP-0501	Eddy Current Examination Method of Non-Ferromagnetic Heat Exchanger Tubing (Zetec MIZ-12 System)	Retired 01/16/98		
NDEP-0502	Eddy Current Examination Method of Non-Ferromagnetic Heat Exchanger Tubing	Retired 2/15/99		
NDEP-0503	Eddy Current Examination for Detecting Welded Seams In Piping	Retired 2/15/99		
NDEP-0504	Eddy Current Examination for Measuring Coating Thickness	Retired 2/15/99		
NDEP-0505	Eddy Current Examination for Sorting Ferrous Versus Nonferrous Materials on Piping System Gamma Plugs and Thermowells	Retired 2/15/99		
600 SERIES - VISUAL METHOD				
NDEP-0601	VT Visual Examination of Piping System and Component Welds at Nuclear Power Plant	13	None	12/1/00
NDEP-0602	Visual Examination of Welds (BSEP)	Retired Date NA		
NDEP-0603	Visual Examination of Welds (HBR)	Retired Date NA		
NDEP-0604	Visual Examination of Welds (Fossil)	Retired 2/15/99		

Number	TITLE	Effective Revision	Interim Change	Two Year Review
NDEP-0606	Remote Visual Examination	4	None	12/1/00
NDEP-0607	Not Used			
NDEP-0608	Visual Examination of Welds (Boiler Tube and Socket Welds)	Retired 2/15/99		
NDEP-0609	Not Used			
NDEP-0610	Not Used			
NDEP-0611	VT-1 Visual Examination of Nuclear Power Plant Components	13	None	12/1/00
NDEP-0612	VT-2 Visual Examination of Nuclear Power Plant Components	14	None	12/1/00
NDEP-0613	VT-3 Visual Examination of Nuclear Power Plant Components	16	None	12/1/00
NDEP-0614	VT-4 Visual Examination of Nuclear Power Plant Components	Retired 2/15/99		
NDEP-0615	Visual Examination of Hydraulic Snubbers at Brunswick Steam Electric Plant	Retired Date NA		
NDEP-0616	VT-3 Visual Examination of Nuclear Power Plant Components at Robinson Nuclear Project	Retired 2/15/99		
NDEP-0617	Modified VT-1 and Enhanced VT-1 Examinations for the Brunswick Nuclear Plant	3	None	12/1/00
NDEP-0618	Not Used			
NDEP-0619	Not Used			
NDEP-0620	VT-1 and VT-3 Visual Examination of MC and CC Components for HNP, BNP, RNP Nuclear Projects	1	None	12/1/00
700 SERIES - LEAK TEST METHOD				
NDEP-0701	Leak Test (Vacuum Box)	Retired 2/15/99		
NDEP-0702	Leak Testing-Pressure Strength/Bubble Formation (SHNPP)	Retired 01/16/98		
NDEP-0703	Leak Testing (Bubble Test)	Retired 2/15/99		
800 SERIES - MISCELLANEOUS				

Number	TITLE	Effective Revision	Interim Change	Two Year Review
NDEP-0801	Replication (Mold Reproduction)	Retired 2/15/99		
NDEP-0802	Crack Depth Measurement Using CC-800B Instrument	Retired 2/15/99		
1000 SERIES - ADDITIONAL EXAMINATION CRITERIA				
NDEP-1000	Additional Examination Criteria for PSI/ISI Surface Examinations	Retired 2/15/99		
NDEP-1001	Not Used			
NDEP-1002	Not Used			
NDEP-1003	Not Used			
NDEP-1004	Not Used			
NDEP-1005	Not Used			
NDEP-1006	Not Used			
NDEP-1007	Not Used			
NDEP-1008	Not Used			
NDEP-1009	Not Used			
NDEP-1010	Recording Data From Direct Visual, Liquid Penetrant and Magnetic Particle Examinations	2	None	12/1/00
NDEP-1011	Weld Joint Identification Marking of Datum Points and Identification	4	None	12/1/00
NDEP-1012	Gridding of Components for Erosion/Corrosion	5	None	12/1/00
APPENDIXES				
Appendix A	NDE Forms	35	None	N/A

**Supplemental Quality Assurance Requirements for the Design Change Packages
Associated with Completion of the Units 2 & 3 Spent Fuel Pool Cooling System**

SUPPLEMENTAL QA REQUIREMENTS

The following is a set of supplemental QA requirements developed for the implementation and turnover of Code items associated with the completion and activation of the Unit 2 & 3 Spent Fuel Pools at Harris Nuclear Plant. This document will be incorporated directly into the "Design Requirements" section of the design change packages for the pertinent modifications, and then by specific instructions in the appropriate sections (installation, testing, turnover, etc) as necessary to ensure that its requirements are implemented.

1.0 GENERAL

1.1 Scope

This document defines the set of QA requirements which will be used to govern the engineering, construction and startup of the Section III, Class 3 portions of the Spent Fuel Pool Facilities originally intended to service HNP Units 2 & 3. This portion of the plant was partially installed during original plant construction, but was suspended subsequent to cancellation of these units. The development of a supplement specific to this scope is necessitated by the following concerns:

- The original N-certificate associated with this program has long since been discontinued, and no partial turnover was conducted for the partially installed piping and equipment.
- The field construction documentation packages for partially installed piping have been discarded and are no longer available

As a result of the above, it is not possible to complete these systems in full compliance with Section III utilizing the previously installed piping and equipment. Since the N stamping process is the prescribed method for demonstrating quality assurance in construction activities, it is necessary to define a suitable alternate program which will ensure that the requisite level of quality exists upon completion and turnover. Generally, the corporate Nuclear Generation Group's Quality Assurance Manual is of suitable rigor to accomplish this. However, the program defined in the corporate QA manual was developed to comply with 10CFR50 Appendix B as it concerns operating plants, and was not intended to specifically conform to the requirements of Section III. For example, the corporate QA program outlines condition reporting requirements which govern field activities and meets the requirements of Appendix B in this regard. However, this program does not integrate involvement of the ANI in documenting adverse conditions, nor does it require the ANI to participate in the closeout of adverse condition reports. In addition, the current site procedures pertaining to field activities are generally oriented towards meeting the requirements of Section XI for inservice inspection, rather than Section III.

To address this issue, a set of QA requirements have been developed and are presented herein to supplement the corporate Appendix B QA Program. Generally, these requirements were the result of a review of the current corporate Appendix B Quality Assurance Program against the requirements of the approved ASME Section III QA

Manual utilized for construction of the Harris Nuclear Plant. These requirements are not intended to delete or revise any requirements in the corporate QA manual, but rather are to provide additional criteria in supplement of the existing program. These criteria will be implemented in one of the following manners:

Revision of site procedures: Since this supplement is not intended to contradict approved site procedures, this might be necessary to reconcile conflicts between the Supplemental QA Requirements and that of existing site procedures.

Incorporation through the work control process: When criteria are stipulated that are not already reflected in site procedures, it may be more suitable to add these through work planning and specific instructions in the work package. The requirements for additional involvement of the ANI would be an example of this.

Procedure revisions will be reflected by markups and inclusion on the Document Update Form (DUF), while work package implementation will be accomplished by specific instruction in the appropriate section of the modification package (implementation, testing, etc.).

1.2 Responsibilities

General - Programmatic responsibilities for implementation of the Corporate Appendix B program, including the site's Section XI Repair and Replacement Program, are as defined in the Corporate Quality Assurance Program Manual and supporting documents, including site procedures. The involvement of site organizations as pertains to the implementation of these supplemental requirements will be subject to their review and approval during the modification approval process.

AIA (ANI) - The Authorized Inspection Agency is responsible for providing the support necessary for implementation of the supplemental requirements described in this ESR. Acceptance of these requirements will be based upon NRC review and approval of the 10CFR50.55a Alternative Plan. Formal AIA endorsement of these supplemental requirements from a programmatic perspective will be accomplished by review and approval of the modification packages which incorporate them.

Modification Engineer - The Modification Engineer for the affected ESR is responsible for implementing the requirements found herein in the most appropriate manner. This would include either revision of site procedures or through direct incorporation into the modification package, as described above.

Modification Responsible Engineer - This supplement pertains only to modification activities completing construction of the spent fuel cooling systems originally intended to service Units 2 & 3. As such, the ultimate responsibility for adherence for this rests with the RE for these modifications. Since this supplement will be incorporated into the

modification packages, the RE is responsible for ensuring that the modification package contains sufficient instructions and guidance to implement it as written.

2.0 DESIGN AND DOCUMENT CONTROL

2.1 Design Control

Design Control over the modification design is directed and coordinated by CP&L in accordance with corporate and site procedures governing the modification process and design activities by outside organizations. This process results in rigorous design review process (including independent design verification) by the A/E and detailed owner's reviews by CP&L engineering personnel.

This supplement pertains only to modification activities completing construction of the spent fuel cooling systems originally intended to service Units 2 & 3. Generally, it is intended that completion of this portion of the plant will be governed by the same revisions of the Code that were utilized for original design and construction. To that end, the applicable version of the Code associated with a particular aspect of construction, and the boundaries of that applicability shall be clearly defined as design inputs in the modification packages. Later versions of the Code may be used only with reconciliation of any differences between it and the Code that was utilized for original design and construction.

2.2 Design Specifications

2.2.1 Design specifications will be prepared for all Code stamped items, in accordance with corporate and site procedures, and will be subject to the following requirements:

- The specification shall clearly delineate Code classification and boundaries and the pertinent code revision associated with the item.
- The specification shall address Code requirements for data reports, including any that may pertain to transmittal to enforcement authorities.
- The specification shall fully conform to Section III design requirements.
- The design specification shall be certified to be correct, complete, and in compliance with the code by one or more Registered Professional Engineers competent in the applicable field of design of components and related nuclear power plant requirements. It is noted that some of site's existing design specifications date back to the construction era, but may have been revised since the plant began operation. In these instances, it is acceptable to use previous certified revisions of design specifications, so long as a reconciliation of any subsequent revisions is performed to assess design impact and integration into the current the Appendix B Program.

2.3 Design Control

- 2.3.1 Design control shall be as directed in the corporate QA program as implemented by corporate and site procedures.
- 2.3.2 Design of Code stamped items shall conform to the version of the Code which would have been utilized during original plant construction. Later versions can be utilized only with documented reconciliation. Design criteria of Section III, Subsection ND shall apply to all Class III piping, equipment and components.
- 2.3.3 Subsequent revision to the affected modification packages shall also be subject to the supplemental requirements defined herein through completion of construction and the turnover process.
- 2.3.4 This supplement is "frozen" as it is incorporated into the 10CFR50.55a Alternative Plan and approved by the NRC. Design changes and modification revision packages shall not delete or revise the content or applicability of these supplemental requirements, in whole or part, without NRC approval.

2.4 Applicability of existing site procedures

- 2.4.1 It is appropriate to use the site Section XI Repair and Replacement as a guide for integration of site procedures with the construction of Code related items. Generally, existing site procedures shall apply as if the Code portions of construction were being performed as a Section XI Repair and Replacement activity. However, where this supplement contradicts existing procedure or program requirements, the requirements in this supplement shall take precedent and the affected procedure or program be revised as appropriate.
- 2.4.2 Welding, including weld procedures, welder qualification, weld material control, use and control of welder ID symbols and preparation of Weld Data Reports, will be done using the Corporate Welding Manual as invoked and implemented through site procedures.
- 2.4.3 The ANI shall have the opportunity to review procedures, including those for welding and QC, which will be utilized for Code related construction activities during the review of work packages prior to field issuance. Likewise, any revisions to these procedures which is intended to be utilized in the work package subsequent to the initial ANI review shall also be identified to the ANI for his review prior to its use.

2.5 Document Control

- 2.5.1 Document Control will be as currently defined in the corporate Appendix B QA program for quality related activities and implemented through site procedures.

2.6 Identification of ASME code Documents

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

3.0 PROCUREMENT

3.1 General

- 3.1.1 The A/E may provide input into the procurement process, however, all procurement will be performed by CP&L under its existing Appendix B Quality Assurance Program and implemented by corporate and site procedures.
- 3.1.2 Procurement of all code stamped items will be accomplished using approved design specifications certified by a Registered Professional Engineer competent in nuclear power plant design.

3.2 Service Contracts

- 3.2.1 Service Contracts intended to obtain services associated with the engineering or construction of piping and equipment affected by this supplement shall be subject to all the rules and requirements of this supplement.

3.3 Code Stamped Items

- 3.3.1 It is intended to complete construction to the version of the Code to which the system was originally designed and specified, which governed construction of the existing portion of piping and equipment installed during initial plant construction. The applicable version of the code associated with a particular aspect of procurement or construction and the boundaries of that applicability shall be clearly defined in the modification package. Code stamped items shall be clearly identified as such in the modification BOM or the Equipment Commissioning List. Code stamped items shall be specified and procured so as to fully comply with Code requirements, including the use of qualified suppliers with appropriate Code certification, and shall be stamped in accordance with code requirements.

The BOM or the Equipment Commissioning List shall, as a minimum, contain the following information regarding Code stamped items:

Commercial information which sets forth items, quantities, terms, conditions, etc. as appropriate, as well as the approved Design Specification(s) which defines the engineering and quality requirements.

- 3.3.2 Any exceptions to the Design Specifications taken by the supplier with regard to a Code stamped item shall be reconciled by revision to the affected Design

Specification prior to proceeding with procurement. Any such revision to the Design Specifications would be prepared, reviewed and approved as set forth for the original specification.

3.4 Qualification of Suppliers

- 3.4.1 Qualification of Suppliers of materials and services shall be accomplished in accordance with the existing CP&L Appendix B Program in accordance with approved plant procedures. All suppliers must be verified as being on the approved supplier's list for the scope of supply and holding active certification from the ASME for any Code items being procured.

4.0 RECEIVING INSPECTION

4.1 Code stamped items

Inspection, examination and acceptance of Code items shall be accomplished in accordance with corporate and site procedures. Receipt activities shall be documented in the form of a Receipt Inspection Report (RIR). Items accepted shall be appropriately tagged / labeled.

Nonconformances noted during receipt inspection shall be reported via Condition Report (nonconformance) initiation, and the affected items placed on hold or rejected. When the vendor's data package is missing or deficient, the item will be placed on hold pending the delivery of the missing information or resolution of the deficiency.

When conditions warrant, Conditional Release requests may be granted to permit progression of work involving a nonconforming item awaiting resolution. When this occurs, it will be processed and approved in accordance with existing site procedures. The ANI will be provided with the closure documentation for any conditional releases affecting Code stamped items or Code related construction.

5.0 STORAGE AND PROCESS CONTROL

5.1 Storage

Storage requirements for Code stamped items will be clearly identified in the Design Specification. Storage control through manufacture and shipment will be governed by the procurement process.

5.2 Equipment Commissioning Plan

5.2.1. General

This section prescribes the methodology which will be followed in commissioning previously installed equipment in support of completing and activating the C & D Spent Fuel Pools. The subject equipment was installed during the original site construction effort for Unit 2 & 3 fuel storage and handling activities, and was spared in place when these units were cancelled. This equipment was never incorporated into the operating unit nor has it been formally maintained under controlled storage conditions since that time. Note that the equipment in question (including Code related equipment) was procured to applicable design and quality assurance requirements, and this plan does not take exception to any of these requirements. Rather this plan prescribes a set of criteria which will ensure that the equipment in question will meet the applicable requirements of Appendix B and is capable of performing its intended function in the completed design.

5.2.2 Field Walkdown / Scope Development

Scope development is accomplished by performing a detailed field walkdown and comparing the modification design to the field condition. The entire list of previously installed equipment (both Code and non-Code related) which is anticipated to be used in the completed design will be compiled to comprise the scope of the Equipment Commissioning Plan. Note that this plan is not limited to mechanical equipment, and will include civil (pipe supports, penetrations), I&C (instrument racks, instrumentation, tubing) and electrical (cables, conduit, cable trays, equipment ground connections) as well. Each item in scope will be identified and individually dispositioned in the modification package.

5.2.3 Document Review / Retrieval

A document retrieval and review process will be included in the matrix of commissioning requirements to ensure that required quality assurance information is on hand. Generally, equipment commissioning matrix documentation requirements will be consistent with that of the original procurement effort. In particular, all Code documentation requirements (including Code data reports) must be satisfied for Code items. Records required for commissioning fall into one of two categories, which are discussed as follows:

(a) Procurement Documentation

This documentation pertains to the information which was originally used to procure the equipment in question and the vendor quality packages which were supplied with the item in response. These records are required to establish traceability and verify that required vendor quality assurance documentation and

quality releases are on file. Generally, this information is available in the Receipt Inspection Report (RIR) generated at the time the item was received. It is not acceptable to assume that the necessary information must have been received and is in order by virtue of its being installed in the field under control of the construction program, as it would have been possible to have issued the item to the field with a conditional release with outstanding quality related issues pending. All Code equipment must have traceability to the Code Data Report(s) for its construction.

(b) Field generated records

Construction records must be reviewed to ascertain to what extent the existing field condition was documented as being complete and satisfactory. Generally, this information exists in the equipment installation packages and has been maintained in document control for the major pieces of equipment in question. Once the equipment installation records have been retrieved, these must be compared against the field condition to verify that the installation as accepted has not been subsequently altered. Previous construction activities can be accepted for use in the modification implementation effort to the extent that required installation documentation exists and is verified to conform to the field condition.

In the event that records are found to be missing or deficient, an assessment is performed to determine what installation can be accepted by virtue of retest or re-inspection, or by use of alternate methods of verification. Alternately, the implications of the documentation deficiency can be evaluated to determine the potential impact to quality. Any such evaluation used to accept field conditions in the absence of required information must be formally documented and subject to design review as appropriate. Except as specifically provided in the 10CFR50.55a Alternative Plan for records of field installation of piping, this equipment commissioning plan is not intended to take exception to Code requirements pertaining to equipment installation or documentation requirements. Given this single exception, an evaluation of a deficiency is not allowed to stand in lieu of installation records which are deemed to be specifically required by Section III of the ASME B&PV Code.

5.2.4 Development of examinations, tests and acceptance criteria

The Equipment Commissioning Matrix shall specify any additional activities necessary to ensure the requisite level of quality assurance in light of the lack of formal controls on storage and handling since this equipment was initially installed. Development of these activities will include the following:

- Field verification of equipment identification against procurement documentation. In the case of Code related equipment, traceability will be established to the Code Data Report(s) and National Board Registration.
- Physical inspections, testing, etc., as required to verify that lack of controlled storage conditions and regular maintenance has not caused any condition affecting

quality. Commissioning criteria shall include consideration of corrosion, fouling, aging, radiation exposure, etc. For Code requirements, any degradation identified would be assessed in terms of Code requirements, with acceptability based on demonstrated compliance with those requirements.

- Physical inspections and considerations necessary to ensure that plant activities since construction have not resulted in any condition potentially adverse to quality (scavenging of parts, introduction of foreign material, damage from personnel and equipment traffic, etc). For Code equipment and piping, these criteria will specifically consider Code required attributes, with acceptability based on full Code compliance.

5.2.5 Repair of Deficiencies

Repair of any deficiencies shall be done in accordance with approved procedures. Since Code items in the scope of this equipment commissioning plan are supplied as completed Section III components from the vendor under that vendor's NPT Stamp Program, repairs to these items meet the definition of "Repairs" in ASME Section XI and shall be accomplished under the site's Section XI Repair and Replacement Program.

5.2.6 ANI Involvement

Code stamped equipment and related commissioning requirements will be specifically identified as such in the modification package in order to facilitate the system certification process. Provisions shall be made to ensure that any work packages generated to commission Code equipment are made available for ANI review subsequent to work completion.

5.2.7 Revising or Altering the Equipment Commissioning Plan

Generally, this equipment commissioning plan does not take exception to Code or quality requirements, but rather prescribes a dedication process which will ensure that all such requirements are met in light of the lack of storage control for the equipment it addresses. The sole exception is with regard to field installation records for Code related piping, which are no longer available and are the subject of a 10CFR50.55a Alternative Plan currently under review by the NRC.

Acceptance of the field installation of this piping is contingent upon approval of this Alternative Plan by the NRC, and revising the Equipment Commissioning Plan with regard to piping acceptability may require prior notification of the NRC. Otherwise, this plan does not take exception from design or quality requirements (including ASME Code requirements), and authorization for its use and any revisions to it are provided under 10CFR50.59.

5.3 Process Control

Process control sheets are utilized to establish measures to ensure that processes, including welding and heat treating, are controlled in accordance with the Code and are accomplished by qualified personnel using qualified procedures.

Generally, process control sheets for Code related construction activities will be as provided for under the site's procedures. Additional process control sheets are found in the Corporate Welding Manual and Corporate NDE Manual, as invoked and implemented by site and corporate procedures.

The ANI will review process control sheets for code related construction activities before they are issued to the field for construction. The ANI will have the opportunity to add any inspection hold points deemed necessary at this time. All process control sheets for Code related construction activities will be reviewed and accepted by the ANI subsequent to completion of field activities.

The hydrostatic test pressure used for pressure testing shall be required to meet Section III requirements, as opposed to those specified in Section XI. The process control sheets for hydrostatic testing shall reflect the more stringent test criteria.

Nonconforming field conditions will be controlled by site work process control and condition reporting procedures. The ANI will be notified of any condition reports initiated against code related construction activities, and will verify any such items are resolved prior to signing off the process control sheets for final acceptance.

Identification tags or markings shall be retained on each code item. When it is necessary to cut or transfer an item during code related construction, material identification shall be transferred to the affected piece prior to cutting. This activity shall be witnessed by QC and appropriately documented in the work package.

5.4 Modification Implementation Procedures

5.4.1 Modification procedures are being utilized for code construction (in the context of this ESR) will be those presently existing for use with the site's Section XI Repair and Replacement Program, subject to the supplemental requirements prescribed herein.

5.5 Start-up Procedures

5.5.1 Detailed start-up procedures will be developed and included in the affected modification package. Review of start-up procedures, including QC review, will be documented by review and signature approval as part of the modification approval process.

6.0 WELDING CONTROL

6.1 General

Welding activities associated with Code construction, including welding procedure qualification, weld materials procurement and control, welding equipment control, qualification of welders, weld process control and post weld heat treatment activities shall be controlled in accordance with the Corporate Welding Manual by the Plant Welding Engineer and the Plant Operating Manual. Welding may be performed by Contractors provided that the contractor is fully qualified to CP&L's welding program for the specific welding or welding related activity being performed.

Contractor's not qualified to and working under CP&L's Corporate Welding Program may only be used for Code welding activities for which they maintain their own program having the appropriate ASME certification. In this case, a service contract must be provided which authorizes the Contractor to invoke his program for the subject scope of work.

Work packages involving welding activities associated with Code construction will be reviewed by QC and the ANI prior to field issuance to ensure that appropriate hold points are included. Weld Data Reports shall be generated for any such welds per the Corporate Welding Program, and hold point inspections shall be accepted by QC and the ANI by signature and date on the WDR.

7.0 CONTROL OF EQUIPMENT, TOOLS, GAUGES AND INSTRUMENTS

7.1 General

Equipment, tools, gauges and instruments specified for calibration control shall be identified, stored, calibrated, and maintained in accordance with site procedures. Calibrations and adjustments shall be accomplished at prescribed intervals and against certified standards having known valid relationships to national standards. If no national standard exists, the equipment manufacturer's recommended standard shall be used. Recalibration shall be performed any time the accuracy of an instrument is suspect.

Traceability shall be maintained between the instrument and equipment or item being tested. The instrument identification number shall be recorded on the appropriate process control documentation. In the event an instrument is found to be out of calibration, a Condition Report must be initiated and an evaluation shall be performed to identify and disposition any suspect inspections, examinations, and test results.

8.0 INSPECTION, TESTS and NONDESTRUCTIVE EXAMINATION (NDE)

8.1 General

NDE activities associated with Code construction, including NDE procedures, qualification of personnel and control of inspection and test equipment shall be accomplished as provided in the Corporate NDE Manual. NDE procedures and acceptance criteria are provided in the Corporate NDE Manual for both original construction code and Section XI requirements. NDE shall be performed on all Code related construction activities in these modifications consistent with Section III requirements, and all such NDE shall utilize Section III acceptance criteria.

8.1.1 Process Control

Inspection, test and examination requirements shall be defined in the work packages and documented on appropriate process control sheets. These packages will be reviewed by the QC and ANI prior to field issuance. Work will not progress past established QC and ANI hold points until the hold point is accepted by signature and date by the QC inspector or ANI.

8.1.2 ANI Review and Approval of NDE Documentation

Records of inspections, tests and examinations containing QC and ANI hold points will not be considered completed until all such hold points are satisfied and the ANI has completed his inspection and signed and dated the process control sheets.

9.0 CODE DATA REPORT AND CERTIFICATION

9.1 General

The piping systems completed under these modifications will not be eligible for N stamping due to issues pertaining to the discontinuance of the original construction program and missing documentation. However, these systems will undergo a certification process similar to N stamping. Installation of Code piping, equipment and components will be documented on an ASME Section III data report "equivalent form". This form will be comparable to an NIS-2 form associated with Section XI repair / replacement activities, and PLP-605 can be used as a guideline for its completion. All work packages for installation of Code equipment shall be clearly identified as such, and provided to the ANI for review prior to field issuance and again upon completion of work activities. Completed and approved documentation pertaining to Code related construction, including field generated records and vendor data packages, shall be compiled in packages pending the review of the ANI for system turnover.

The ANI will review the documentation and certify completeness and conformance with the requirements of the corporate Appendix B Manual and these supplemental requirements prior to system turnover. Since these supplemental requirements will be implemented either by procedure revision or modification instruction, this certification will be accomplished by verifying that all Code related activities were conducted and documented in accordance with site procedures and the requirements of the modification package. The specific list of items reviewed to determine completeness and conformance will be provided as an attachment to this certification. Similar to the N-5, this listing will constitute the boundaries of the completed construction which would have normally been N-stamped.

The completed certification of the affected piping, equipment and components will be included in the modification documentation package as a permanent QA record.

10.0 NONCONFORMANCE AND CORRECTIVE ACTION

- 10.1 Nonconformance and corrective actions will be addressed within corporate and site procedures, including those associated with procurement, work control and condition reporting. Satisfactory resolution of any non-conformances or adverse conditions associated with code stamped items or code related construction activities will be verifiable by the ANI and all other responsible parties prior to turnover.

11.0 RECORDS CONTROL AND RETENTION

- 11.1 Records control and retention will be as directed by site work control and document control procedures, except as related to the ANI's role in certification as described herein.

12.0 AUTHORIZED NUCLEAR INSPECTOR

- 12.1 The services of an AIA shall be used as described herein. It is noted that a qualified ANI would be necessary for Section III construction activities, while an ANII is involved when performing repair and replacement activities under Section XI. Since elements of both are associated with this modification, dual qualification will be required for the AIA's site representative involved with this modification. Signoffs for this individual will reflect this dual qualification (ANI / ANII).

13.0 REVIEW, CONTROL AND REVISION OF SUPPLEMENTAL QA REQUIREMENTS

- 13.1 These supplemental requirements as incorporated into the modification design and approved therein will become part of a 10CFR50.55a Alternative Plan and therein subject to NRC review and acceptance. Since NRC acceptance for the alternative plan represents the authorization for these supplemental QA requirements, revision to these requirements can only be accomplished by submittal and review of the NRC as a revision to the Alternative Plan. Exceptions would be allowed only for revision to items which comply with all Code and Regulatory requirements and are provided for completeness and clarity (see Equipment Commissioning Plan), or administrative or clerical changes which do not affect technical requirements.

Comparison of CP&L ASME Section III QA Manual
vs.
Present QA Program Requirements.

Introduction

The basis for the overall quality assurance program used by Carolina Power & Light Company for the design and construction of the Shearon Harris Nuclear Power Plant is described in the 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 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 10 CFR50 Appendix B.

Certain aspects of Shearon Harris Nuclear Power 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 Code items for the Shearon Harris Nuclear Power Plant, an additional set of QA requirements were required to be developed, reviewed, approved and implemented specifically in order to obtain the required ASME Certificates of Authorization. ASME Code Section III, Subsection NA requires that an applicant for a Certificate of Authorization develop a QA program and implementing procedure specific to the proposed scope of work, and that the "the applicant shall request the Society to evaluate this procedure and Program prior to the issuance of a Certificate of Authorization. " For construction of the Shearon Harris Nuclear Power Plant, CP&L met this requirement by the formalization of its "ASME Quality Assurance Manual". Section 1.1 of this manual (Scope) states that

"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 applicable".

It is important to note that, while the CP&L ASME Quality Assurance Manual may have shared certain common facilities, procedures, personnel, etc. with the overall site QA program, it did not rely on the larger program to demonstrate compliance with Code requirements. The CP&L ASME Quality Assurance Manual was specifically the QA Program reviewed and approved by the ASME for the purpose of granting N, NA and NPT Certificates of Authorization to CP&L for the Shearon Harris Nuclear Power Plant, and the program regularly subjected to ASME audit in order to maintain those authorizations. Therefore, in formalizing a QA Program for the completion of Construction of the Unit 2 Spent Fuel Pool Cooling Systems, it is appropriate that the requirements of this CP&L ASME QA Manual be compared against those of the current Corporate Appendix B QA Program. The results from this comparison would provide the basis for a set of "Supplemental QA Requirements", which would be used to facilitate completion of construction in accordance with Section III to the extent feasible, given the issues of missing documentation and no partial turnover for previously installed equipment.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
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1.0 Scope

1.1.1	The Construction QA manual was intended to provide measure to assure compliance with the requirements and rules of the ASME Boiler and Pressure Vessel Code, Section III, Division 1, and was structured in accordance with the requirements of Section NA, Subsection NA-4000. This manual was applicable to activities associated with plant items and services for which compliance with Section III was mandatory.	The Corporate (Appendix B) QA Manual (QAM) establishes measures for assuring that organizations performing safety-related activities perform their responsibilities in a manner which results in safe nuclear power production. This manual also establishes QA programs for certain non-safety related areas of the plant, such as Rad-Q, FP-Q and Quality Class B. The Corporate QA Manual is not inclusive, but is intended to be used in conjunction with Section 1.8 and 17.3 of the FSAR to define the overall program and effect the development of procedures that implement that program.	The CP&L Corporate QA Program meets the eighteen QA criteria in Appendix B and is also the umbrella QA program for the site ASME Section XI Repair and Replacement Program. Much as would have been done at original construction, it is CP&L's intention to use the Corporate QA Program as the umbrella program to complete and activate the Unit 2 Spent Fuel Pools, augmenting this program with supplemental requirements extracted from the ASME QA Manual with the intent to achieve compliance with Code requirements to the extent feasible. NA-4133.2 defines the requirement for the AIA to review any significant changes to the ASME QA program. The design change package(s) for this activity will be subject to ANI review / approval. This will include review of the supplemental QA requirements and the turnover / certification process.
1.1.2	Identifies CP&L as the Owner, as well as the constructor, Installer and Fabricator	Written with CP&L as Owner / Operator (Ref. REG-CPL-000; CP&L Quality Assurance Program Policy)	No ongoing construction program in place. CP&L proposes to complete construction under Appendix B program much as would be done if repaired / replaced under Section XI, but using more stringent Section III criteria
1.1.3	Specifies that supporting companies shall operate in accordance with QA programs which are in compliance with this manual	Supporting company's activities will be directed either by contractual agreement or the supplier's QA program reviewed / approved by CP&L before issuance of PO or contract. (QAM 4.4).	QAM requires that an ASL be maintained, this is accomplished under MCP-NGGC-0406. MCP-NGGC-0406 also requires that contracts either utilize a CP&L approved program or that the CP&L program be invoked. Existing program ensures that supporting companies operate either in accordance with the CP&L QA manual or their CP&L approved program. No supplement required.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
1.1.4	Specifies that the Constructor shall operate in accordance with this manual (no separate QA program)	See 1.1.3, above	All construction activities in the scope of the Alternative Plan shall be accomplished in accordance with the CP&L QA program or a CP&L approved QA program.
1.2 Responsibility for the QA Program	Responsibility for the Quality Assurance Program with Senior Vice President - Power Supply and Engineering & Construction.	QA Program approved by the Senior Vice President, Nuclear Generation Group (Ref. NGGM-PM-0007; QAM 2.2)	Comparable level of management responsibility. No supplement requirements needed.
1.3 Organization and Responsibilities	As shown in organization chart of the era. Predictably, this chart reflects the departments and personnel typical of a construction oriented organization, such as the Harris Plant Construction Section, and numerous management positions specific to the construction effort.	As described in FSAR 17.3, an organization fairly typical of operating plants. One noteworthy change from the construction organization is the transition to relying on the principle that the line organization has the primary responsibility for quality and safety. As such, the functions of the QA / QC Section which existed during the construction era are now largely satisfied by continual self-assessment, with evaluation / oversight of this program being provided by the Nuclear Assessment Section. (Ref. FSAR Section 17.3.1.1)	No changes to the site organization to be implemented as a result of this activity.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
1.4 Training and Qualification	Each Dept Manager for the Construction Site and General Office responsible for developing procedures for training and indoctrination. As a minimum, personnel will be trained in this QA Manual, supporting procedures and subsequent changes.	Each Dept head responsible - personnel performing activities affecting quality shall be indoctrinated and trained such that they are knowledgeable in the applicable quality related procedures and requirements. (QAM 7.4.2)	During the construction era, procedure TP-25, "Training of Supervisory and Technical Personnel in Implementation of ASME N Stamp Program" was developed to indoctrinate personnel in the CP&L N Certificate Program. The scope of the SFP Activation Project is not such that a large scale training effort is warranted, rather, training classes shall be held for supervisory and technical personnel which are directly responsible for the design, installation, startup and turnover of the Unit 2 Spent Fuel Pools. The purpose of this training will be to indoctrinate these key personnel on the Alternative Plan and its impact on the construction effort.
1.5 Delegation of Responsibility	Allows delegation of responsibility for any activity delineated in the manual	Requires that the authorities and duties of persons and organizations performing activities affecting quality be clearly established and delineated in writing. (QAM 2.4)	No specific delegation of responsibility proposed for this activity. Any special roles or duties of key personnel responsible for implementing the Alternative Plan shall be defined in the "Supplemental QA Requirements" and incorporated into the modification package for that activity.
2.0 Design and Document Control			
2.1 Design Control by Engineering Organization	Specifies CP&L participation in design, including maintaining control over engineering activities, reviewing, approving A/E and selected NSSS designs, directing document distribution, generating / updating design documents in accordance with authorizing procedures	Defines requirements for design control, including interface with design organizations (QAM 3.10)	CP&L responsible for design control for out-sourced design work, and performance of reviews as necessary to accept design products from outside organizations and assume responsibility for the design. (Ref. EGR-NGGC-0005) For this activity, design performed by A/E (Bechtel) through approved interface agreements. Implementation of the Alternative Plan integrated into the design change packages through Bechtel and subject to CP&L owner's review.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
2.2 Design Specifications, Calculations, Stress and / or Design Reports Section 2.2.1	Lists specific requirements for Design Specifications, calculations, design reports	Requires that measures be established to assure that applicable requirements are translated into design documents. (QAM 3.3, 3.4)	Overall design requirements for the design change package provided in EGR-NGGC-0005. Procedural requirements for content of design specifications found in ENP-013, and for calculations in ENP-011. ENP-013 requirements pertaining to content of specifications of similar rigor to that found in the ASME QA Manual. Also, note that per ENP-013, procurement specifications for Q-List equipment shall comply with the applicable sections of ANSI N45.2.13, Section 3.2.
2.2.2	Requires certification of the Design Specification by one or more Registered Professional Engineers competent in the applicable field of design of components and related nuclear power plant requirements.	Requires that measures be established to assure that applicable requirements are translated into design documents. (QAM 3.3, 3.4) Has no comparable requirement regarding certification of design specifications by Professional Engineers	Requires review/ approval of design specifications and design change packages; PE certification of specifications, calcs or design change packages not required under ENP-013, ENP-011 or EGR-NGGC-0005. Supplemental QA requirements for implementing Alternative Plan to require that design and procurement specifications associated with Code portions of design change be subject to PE certification. Note that this is generally not a significant issue, as most of these specifications have not been revised since the construction era.
2.2.3	CP&L has responsibility for assuring that copies of the certified Design Specifications are maintained and made available for the ANI and the NC enforcement authority having jurisdiction before Code items are placed into service	Requires that Design Specifications, as QA records , be maintained and retrievable in facilities that prevent deterioration, damage or loss. No ongoing requirements for reviews by the ANI or state enforcement authorities.(QAM 14.3)	Design specifications, design change packages, calculations, etc. are available in Document Control for review by ANI and other authorities and agencies. NC State Dept of Labor Boiler and Pressure Division has been briefed on the Alternative Plan and will conduct an independent review for the purpose of granting variance, relief from State requirements as deemed appropriate.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
2.2.4	The approved design organization responsible for Code items shall provide Design Specifications that are in accordance with Code.	Requires that measures be established to assure that applicable requirements are translated into design documents. (QAM 3.3, 3.4)	ENP-013 requires that codes and standards to be utilized in the design, fabrication, testing, delivery, and inspection of specified equipment, components and materials be appropriately identified, and that codes or standards and their effective dates are consistent with regulatory and plant modification requirements. Supplemental QA requirements developed for this project specifically require that the modification design fully conforms to Section III design requirements.
2.2.5	CP&L as the N Certificate Holder, is responsible for the design of piping systems, etc., and the adequacy and completeness of design documents. CP&L shall be responsible for assuring that Stress and or Design reports are prepared as set forth in the Code.	No N Certificate requirements associated with current program; however, CP&L as the licensee does maintain ultimate responsibility for configuration / design control issues.	Code portions of scope are Class 3. No formal stress reports required per ASME Section III requirements. Design inputs and parameters are delineated in the design change per EGR-NGGC-0005. Piping stress calculations are provided for the design as appropriate.
2.2.6	Requires review of the Certified Stress Report	N/A	No formal stress reports required. Design, including piping stress calculations, subject to plant review and approval per site procedures.
2.2.7	Lists requirements associated with modifications of any design document from the revision used in preparing a Stress Report	N/A	No stress report is required. Nonetheless, modification, review and approval of any design document at HNP is accomplished in accordance with applicable plant procedures which ensure the appropriate level of scrutiny is applied. Also, note that an electronic records management system (NRCS) serves to track document revisions and impacts to affected documents (Ref. NGGD-0300, PLP-202).

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
2.2.8	Addresses requirements for Code Class 1 and 2 steam and feedwater systems.	N/A	N/A, since scope is limited to Section III, Class 3 only.
2.3 Design Changes 2.3.1	Design changes shall be controlled in accordance with design control measures applied to the original design and require review / approval by the organization performing the original review. Design change approval required prior to final acceptance by QA/QC and the ANI. The design organizations and CP&L are responsible for design changes	Design changes controlled in accordance with design control measures which require consideration of design requirements. (QAM 3.3, 3.4)	Appropriate level of design change control exists in current program. Design change packages from outside suppliers subject to CP&L reviews. (Ref. EGR-NGGC-0003, 0005) Relative to the "Supplemental QA Requirements" associated with the Alternative Plan and subject to NRC approval, these will not be changed without notification / submittal to the NRC as appropriate. Also, note that the turnover process integrated into the modification package in the form of "Supplemental QA Requirements" requires that the ANI certify that all Code related activities were conducted and documented in accordance with applicable procedures and the modification package. These measures will ensure that design changes are fully approved prior to final turnover and declaration of operability.
2.3.2, 2.3.3, 2.3.4	Defines process for generating design changes (Field Change Request / Permanent Waiver)	Defines process for generating design changes (QAM 3.5)	Changes to design package controlled per EGR-NGGC-0005, will be processed as a revision and subject to appropriate level of reviews. Appropriate level of design change control exists. No supplement necessary.
2.4. Site Generated Specifications, Drawings and Procedures 2.4.1	This section deals with requirements for generation of documents associated with assembly, fabrication and installation of Code items at the construction site.	Generation and approval of site documents per applicable site procedures (QAM 6.0)	Generation of documents accomplished per modification requirements and plant procedures consistent with Appendix B requirements. No supplement necessary.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
2.4.1.1	Measures shall assure that documents and changes are reviewed for adequacy by authorized personnel and are available for use at the location where the activity is performed.	Requires that measures be established to assure that activities affecting quality are reviewed prior to issue and to control the issuance of documents. (QAM 6.1, 6.4.4, 14.4)	Generation, review, approval and retention of design documents controlled per corporate and site procedures. NRCS provides tracking for revision level and outstanding impacts. Appropriate level of design review and control of design documents exists. No supplement necessary.
2.4.1.2	Documents shall be reviewed by appropriate personnel.	Requires that measures be established to assure that designs and procedures are reviewed to ensure appropriate criteria and design inputs have been specified. (QAM 3.4.2, 6.4.4)	Review requirements for documents defined in site and corporate procedures. (Ref. EGR-NGGC-0003) Appropriate level of design review exists. No supplement necessary.
2.4.1.3	Copies of documents applicable to Code items shall be made available to the ANI and enforcement authority.	Requires that Design Specifications, as QA records, be maintained and retrievable in facilities that prevent deterioration, damage or loss. No ongoing requirements for reviews by the ANI or state enforcement authorities.(QAM 14.3). All documents associated with Code activities will be available in Document Control..	The design change packages, including revisions associated Code activities, will be subject to ANI review and approval per the requirements of EGR-NGGC-0005. Records will be provided to the NC DOL Boiler and Pressure Division as needed to support their review of this activity.
2.4.2	The Discipline Managers have overall responsibility for control and development of site-generated specifications used for field procurement or fabrication of Code activities.	Defines responsibilities and requirements for the development and control of design documents. (QAM 3.3, 3.4, 3.5)	Responsibility for specifications in accordance with ENP-013. Adequate level of responsibility exists. No supplement necessary.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
2.4.2.1, 2.4.2.2, 2.4.2.3	Delineates specific requirements associated with content, review and approval of site generated specifications. Requires that design specifications for Code items be certified by PE	Requires that measures be established for selection and review for suitability of application of materials, equipment and processes that are essential to safety related functions of structures, systems and components. (QAM 3.4, 3.5)	<p>Site generated specifications per ENP-013; requires that codes and standards to be utilized in the design, fabrication, testing, delivery, and inspection of specified equipment, components and materials be appropriately identified, and that codes or standards and their effective dates are consistent with regulatory and plant modification requirements.</p> <p>ENP-013 requirements pertaining to content of specifications are of similar rigor to that found in the ASME QA Manual. Also, note that per ENP-013, procurement specifications for Q-List equipment shall comply with the applicable sections of ANSI N45.2.13, Section 3.2. Supplemental QA requirements states that all design specifications for Code items will be PE certified.</p>
2.4.3	The Manager -QA Services has overall responsibility for development and control of Corporate Quality Assurance Dept. procedures.	Quality assurance integrated into line organization procedures and processes. NAS provides oversight; evaluates performance / effectiveness. (FSAR 17.3.1.1)	No supplement necessary.
2.4.4, 2.4.4.1, 2.4.5	Defines responsibility for development and approval of Construction administrative, technical, work and startup procedures related to Code items.	Requires procedure development and adherence for items affecting quality (QAM 6.4). Also, CP&L complies with Reg. Guide 1.33 as described in FSAR Section 1.8.	Specific administrative requirements are included in the "Supplemental QA Requirements" including the role of the ANI in Code related activities and defining the turnover process. Startup procedures shall be provided as appropriate in the design change packages for the work involved.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
2.4.6	Defines responsibilities and process for preparation, review, approval and revision of instrument isometric sketches. Defines process for red ink changes to these drawings, as well as criteria for rerouting without "red-lining".	Defines requirements for design control (QAM 3.3, 3.4)	Preparation and control of design drawings / sketches accomplished by ENP-012. Changes to approved design sketches accomplished through ESR revision process. Latitude for rerouting without drawing change limited to tolerances; defined in MMP-003. Appropriate level of design control exists. No supplement necessary
2.5 Site Document Control Section 2.5.1	Defines records management methods for distribution and control of specifications, drawings and work packages. Requires that documents issued "for info only" be appropriately stamped to preclude using for construction.	Requires that measures be established to control the issuance of documents which prescribe activities affecting quality (QAM 6.1, 6.34, 14.4)	Records management processes for distribution and control defined in RMP-002, 006. Verification of working document requirements provided in PLP-202. No supplement necessary
2.5.2, 2.5.3	Requires that document revisions be controlled in accordance with measures, including review and approval authorities, applied to the original document. Requires that provisions be made to assure that current revisions of documents are available for use. Defines distribution transmittal requirements.	Requires that measures be established to control the issuance of documents which prescribe activities affecting quality (QAM 6.1, 6.34, 14.4)	Procedural requirements for verification of working documents found in PLP-202, use of NRCS allows real time verification of revision level and affected documents. Control and distribution of documents / revisions accomplished through RMP-002 and related procedures. Current program provides adequate assurance that revisions are properly controlled, and that design and construction activities are accomplished using the latest effective document revision. No supplement required.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
Section 2.6 Identification of ASME Code Documents 2.6.1, 2.6.2	Requires that Purchase Requisitions, purchase orders and procedures used for fabrication and installation of Code items be identified as ASME Section III.	Requires that procurement control measures be established such that applicable regulatory requirements, design bases, etc are suitably included or referenced in the procurement of material, equipment and services (QAM 4.5).	Material to be procured specified in design change package through BOM per EGR-NGGC-0005. Materials acquisition controlled through MCP-NGGC-0002, 0401. Procedural controls are in place to ensure that appropriate considerations are made in materials procurements. However, to ensure that all Code material is procured as such, the "Supplemental QA Requirements" states that all Code items to be procured for this project shall be clearly denoted as such on the procurement documents and the design change package BOM.
3.0 Procurement			
3.1 Service Contracts	Defines requirements for services contracts, including those for engineering consultants & A/Es and Constructor and / or Construction Manager	Requires that procurement control measures be established such that applicable regulatory requirements, design bases, etc are suitably included or referenced in the procurement of material, equipment and services QAM 4.5).	Development of contract and contract administration governed by MCP-NGGC-0001; qualification of suppliers and audits accomplished per MCP-NGGC-0406 Suppliers of Code items must be appropriately qualified and on the ASL for Section III materials. No supplement required.
3.2 Procurement by the A/E 3.2.1 - 3.2.12	States that the A/E is responsible for procurement of Code stamped items on behalf of CP&L, outlines bid and evaluation process for suppliers.	Per approved interface agreements for this project, the A/E is responsible for providing complete specification to facilitate procurement, but procurement process will be accomplished by CP&L under their program and procedures.	Suppliers of Code items must be appropriately qualified and on the ASL for Section III materials and services. The bid and evaluation process outlined in the ASME QA Manual has been supplanted by the process for identifying, qualifying and auditing of suppliers per MCP-NGGC-0406. No supplement required.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
3.3 Site Procurement 3.3.1 - 3.3.14	Defines requirements / responsibilities for controlling field purchase requisitions for Code items and services	Procurement will be accomplished by CP&L under their program and procedures.	All Code items procured for this project will be specified as such in the design change package BOM and procured to applicable Code requirements from appropriately qualified vendors. Ref. MCP-NGGC-0001, 0002, 0401, 0402, 0406. Appendix B procurement is well defined and adequate. No supplement required.
3.4 Reclassified Material	Lists requirements for upgrading materials	N/A - no upgrade of Code items will be utilized in support of this activity.	No supplement required
4.0 Receiving Inspection			
4.1 - 4.13	Outlines requirements for receipt inspection of Code items. Lists responsibilities for QA/QC to accomplish receipt inspection in such a manner as to ensure that Code items are in compliance with requirements, and to prevent damage, deterioration or loss. Includes requirements for inspection and examination, identification and resolution of nonconformances, conditional release requests, and item acceptability.	The Corporate materials control program includes procedures for receipt inspection, storage, issuance and control of items	The Corporate materials control program meets the requirements of Appendix B and is deemed suitable for control of safety related items, including Code items. It is noted that this program is currently utilized for materials procured for use in the site Section XI Repair and Replacement Program.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
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5.0 Storage and Process Control

5.1 - 5.1.1 Storage	Outlines requirements and responsibilities for storage of Code items.	Requires that measure be established to control handling, storage, cleaning and preservation of material and equipment (QAM 5.3, 5.5, 5.6)	<p>The Corporate materials control program meets the requirements of Appendix B and is deemed suitable for control of safety related items, including Code items. It is noted that this program is currently utilized for materials procured for use in the site Section XI Repair and Replacement Program.</p> <p>For those items which were installed during original construction and which will now be utilized in the modified design, the Supplemental QA Requirements defines an Equipment Commissioning Plan which outlines dedication requirements. Notably, this plan does not provide any exception to Code requirements except as pertains to documentation of field installation of piping (Addressed in the Alternative Plan).</p>
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ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
5.2 Process Control 5.2.1, 5.2.2	Requires that process control sheets be utilized to establish measures assuring that processes, including welding and heat treating, are controlled in accordance with the Code and accomplished by qualified personnel. Process control sheets have appropriate spaces for QA/QC signature and for the ANI.	Requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel using qualified procedures in accordance with applicable requirements. (QAM 7.4, 11.3)	<p>Generally, process control sheets in existing site procedures have appropriate verification of quality, including ANI review and involvement. It is noted that those procedures commonly associated with Section XI activities may specify ANII, vs. ANI. For the purposes of this project, the authorized inspector will be qualified as both.</p> <p>In addition, "Supplemental QA Requirements will include a requirement that the ANI review all process control sheets for Code related construction activities before they are issued to the field for construction, giving the ANI the opportunity to not only review the work planning, but also to specify any additional reviews / hold points as deemed necessary. Process control sheets documenting Code required attributes will be reviewed and accepted by the ANI prior to turnover.</p>
5.2.3	For fabrication and installation of Code items by welding, the Weld Data Report, tank fabrication report and the safety-related instrumentation report are the process control sheets utilized. For pipe spool modifications, the Pipe Spool Fabrication / Modification Record is used to supplement the WDR as a process control sheet.	Requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel using qualified procedures in accordance with applicable requirements. (QAM 7.4, 11.3)	Site and corporate procedures associated with welding of Code items provide reference to the Corporate Welding Manual (NGGM-PM-0003) which utilize the Weld Data Report as a process control sheet. WDR in Corporate Welding Manual is consistent with Code requirements. No tank fabrication associated with this project.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
5.2.3.1- 5.2.3.3	Defines requirements / usage of the Pipe Spool Fabrication / Modification Sheet.	Requires that measures be established to assure that special processes are accomplished by qualified personnel using qualified procedures in accordance with applicable requirements (11.3).	The "Pipe Spool Fabrication / Modification Sheet utilized during the construction era is not applicable to this project. Piping will be installed using modification WR/JOs for planning and implementation, and process control sheets from applicable plant procedures for material traceability, identification and qualification of personnel, quality verification, etc. Piping fabrication and installation process control sheets are provided in MMP-002, the Corporate Welding Manual and other applicable procedures.
5.2.4 - 5.2.11	Specifies process control sheets for repair or rework of non-welding activities, flanged or threaded connections, pressure tests, instrumentation, tube bending, etc.	Requires that necessary process control sheets for these activities are provided in corporate and site procedures. (QAM 7.4, 11.3)	Existing process control sheets are the same utilized for site Section XI Repair / Replacement Program. These sheets are adequate to direct and document this work.
5.2.12	Requires QA / QC notification of the ANI when a mandatory hold point is reached, and that hold point inspections be accepted by signature (or initials) and date on the process control sheet prior to work proceeding past that point.	Requires that work not proceed beyond hold points without the consent of the designated representative. (QAM 2.2, 3.4, 3.7)	<p>Work planning procedures and process control sheets incorporate hold points as appropriate for independent craft verification, QC, and for Code activities, for the ANI as well. Procedures require that hold points be established and utilized as appropriate. (Ref. WCM-002, MMM-001, ADM-NGGC-0104)</p> <p>Existing procedures are adequate with respect to incorporating independent verification and QC hold points into work planning and process control sheets. Additional controls regarding ANI involvement will be accomplished by requiring that all work packages associated with Code items be clearly identified as "ASME Section III", and be reviewed by the ANI prior to field issuance to allow hold points to be added if he desires.</p>

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
5.2.13	See Section 10.0 for discussion on nonconformances	-	-
5.2.14	Requires that identification tags or markings be retained, and transferred when necessary to cut an item. This transfer of identification was verified and documented by QA/QC.	Requires that measures be established to assure that identification of items are maintained by heat number, part number or other appropriate means, on the item or records traceable to the item throughout the fabrication, erection, installation and use of the item. (QAM 3.5, 3.7, 5.3, 5.4, 5.5, 10.5)	NGGC-MCP-0402 requires that traceability be accomplished at issuance either by markings or on issue documentation, as appropriate. For piping, verification of material identification is documented on process control sheets found in MMP-002. Additional controls regarding maintaining identification and traceability of materials is provided in ADM-NGGC-0104 and MMM-001. Corporate Welding Manual NW-04 also requires that material identification numbers be transferred when material is cut and that permanent markings be established in accordance with Code requirements. Adequate control of materials is provided with existing procedures and processes. No supplement required.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
5.2.15	Lists detailed requirements for labeling, identification requirements associated with maintaining traceability, particularly with regard to welding materials. Requires that hold or reject items be withheld from use, and that material protection procedures be implemented to prevent damage or deterioration.	Requires that measures be established to assure that identification of items are maintained by heat number, part number or other appropriate means, on the item or records traceable to the item throughout the fabrication, erection, installation and use of the item. (QAM 3.5, 3.7, 5.3, 5.4, 5.5, 10.5)	<p>NGGC-MCP-0402 requires that traceability be accomplished at issuance either by markings or on issue documentation, as appropriate. The Corporate Welding Manual, NGGM-PM-0003, provides for issuance and control of welding materials in accordance with Code requirements. NGGC-MCP-0401 defines the receipt inspection / material disposition process, and precludes inadvertent issuance and installation of items not accepted except for conditional release, and in that case ensures that this material will be accepted prior to turnover. MMM-001 provides requirements regarding handling and storage of materials once they are issued for installation.</p> <p>Sufficient controls exist relative to materials identification and traceability, including welding materials. Items not accepted are precluded from issuance except for conditional release, and this process ensures that the material will be accepted prior to turnover. Work control procedures assure that Q material is properly handled, stored and segregated. No supplement required.</p>
5.3 Construction Procedures Development	Defines responsibilities and requirements regarding development of construction procedures.	Defines requirements for preparation, review, approval and control of procedures (QAM 6.0)	Existing corporate and site procedures will be used to direct construction, with additional instructions / controls provided by the modification package as described herein.
5.4 Start-Up Procedures Development	Defines responsibilities and requirements regarding development of Start-Up procedures	Requires test control as required to demonstrate that structures, systems and components will perform satisfactorily in service. (QAM 3.4, 3.7, 4.5, 11.3)	As opposed to plant start-up, which covered a wide range of systems and equipment, start-up scope for this project is very limited, will be accomplished by including necessary instructions in the modification package for the affected scope of work. Start-Up procedures will be provided in the modification packages. No supplement required.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
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6.0 Welding Control

**6.1 Procurement
of Welding
Material
6.1.1**

Requires that welding material used in the construction Code items conform to Code requirements as detailed in the Site Specification SS-021, "Purchasing Welding Materials for Permanent Plant Construction" Provides requirements regarding material tests to be conducted by the manufacturer.

Requires that procurement control measures be established such that applicable regulatory requirements, design bases, etc are suitably included or referenced in the procurement of material, equipment and services (QAM 4.5).

Procurement and control of welding materials accomplished by Corporate Welding Manual, which invokes specification CPL-XXX-W-01, "Welding Filler Metals and Materials Procurement for Nuclear Power Plants, ASME Section III Applications". Program outlined in the Corporate Welding Manual provides a well-defined and specific process for specification and procurement of welding materials.

6.1.2

Requires that POs for weld materials include weld material classification and that testing and certification be performed to the requirements of ASME Code NB2400 for each heat and / or lot of material in accordance with the latest mandatory addenda of the ASME Code, Section II, Part C; and the 1974 Ed., 1976 Winter Addenda of Section III.

Requires that procurement control measures be established such that applicable regulatory requirements, design bases, etc are suitably included or referenced in the procurement of material, equipment and services (QAM 4.5).

Specification CPL-XXX-W-01 ensures that welding materials procured for Code applications conform to ASME Code Section II, Part C and Section III requirements; Use of this spec, invoked by the Corporate Welding Manual provides equivalent assurance of Code conformance. No supplement required



ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
6.1.3	Specifically requires that welding materials received from a supplier without proper certification and complete documentation, as required by the Code, shall be tagged and placed on "Hold" status in a segregated area until the documentation has been received or corrected.	Procedures require that materials, parts, and components be identified and controlled to prevent the use of incorrect or defective items. Requires that items accepted or released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation of further work, and that items not meeting applicable requirements are identified and controlled until proper disposition is made. (FSAR 17.3.2.6)	Welding materials are received and inspected in accordance with NGGC-MCP-0401, which defines the receipt inspection / material disposition process, and precludes inadvertent issuance. Only when these materials are accepted, they are transferred to bin locations in the Weld Material Issue Station. Once there, the issuance and control of welding materials is strictly controlled by the Plant Welding Engineer in accordance with the Corporate Welding Manual.
6.2. Welding Procedure Qualification 6.2.1	Defines responsibilities for preparation, qualification and approval of CP&L welding procedures. Requires that welding procedures be qualified in accordance with ASME Code Section IX and meet the requirements of Section III. Requires that QA/QC be notified of procedure test schedules to allow QA/QC monitoring and documentation of the activity.	Requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel using qualified procedures in accordance with applicable requirements. (FSAR 17.3.2.11) Requires that if mandatory inspection hold points are required, work shall not proceed beyond these hold points without the consent of the designated representative. (QAM 3.4, 3.7)	The Welding Material Control Procedure (NW-03) in the Corporate Welding Manual conforms to stringent requirements for welding in accordance with ASME Code requirements. No supplement is required. Procedure NW-01 in the Corporate Welding Manual places responsibility for development, revision and qualification of welding procedures with the Welding Engineer. NW-01 also requires that WPS be in accordance with ASME Code Section IX and other referenced codes as applicable (includes Section III). Procedures in the Corporate Welding Manual provide compliance with requirements; no supplement required

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
6.2.2	Provides forms to record actual welding parameters, test results and Code required data, to be certified by the Welding Manager or his representative. Included QA/QC signature of these records after review against Code requirements and submittal to the ANI.	Requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel using qualified procedures in accordance with applicable requirements. (FSAR 17.3.2.11) Requires that if mandatory inspection hold points are required, work shall not proceed beyond these hold points without the consent of the designated representative. (QAM 3.4, 3.7)	QA/QC review is not required, but the monitoring and documentation of variables as the test proceeds is required. The test weld is subject to NDE and testing as required by codes and specifications, performed by certified personnel. The completed WPS is independently reviewed by a WE for approval. Current process does not require ANI involvement in the qualification process. Section III, Subsection NA-5252 requires that the Inspector assure himself that welding procedures have been qualified under the provisions of Section IX and Section III, and may request re-qualification as a requirement. The Code does not specifically require the ANI to review the WPS as it is developed.
6.3 Qualification of Welders and Welding Operators 6.3.1, 6.3.2	Defines responsibilities and requirements for testing, qualification and approval of welders and welding operators. Qualification is required in accordance with Section IX and the approved WPS. Tests will be performed in the weld shop under the Welding Manager. Welders are qualified on test coupons, with test results submitted to Document Control. Welder qualification status is maintained in a Welder Qualification Status List. Copies of the test records and Welder Qualification Status Report are made available to the ANI.	Not specific to qualification of welders and weld procedures, but requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel using qualified procedures in accordance with applicable requirements. (FSAR 17.3.2.11)	Qualification of welders and weld operators provided for in procedure NW-02 of the Corporate Welding Manual. Qualification specific to the requirements of the WPS; Welders qualifying to make Code weldments would be qualified per Code requirements. Testing is performed in a training / qualification area under the supervision of Weld Test Shop personnel. Test results are recorded on the Performance Qualification Test Record (PQTR) and reviewed and approved by the PWE. Testing is subject to monitoring by other organizations, including the ANI, "as applicable". The PWE maintains welder qualification records and the Welder Qualification Status Report. Qualification program meets Code requirements for applicable WPS, is the basis for the welding program used for the site Section XI Repair and Replacement Program.



ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
6.3.3	Welders shall be assigned a welder symbol, and a log shall be maintained for welding symbols. Upon termination or loss of the symbol stamp, that symbol stamp shall not be reassigned to another welder for a period of one year.	Not specific to qualification of welders, but requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel (FSAR 17.3.2.11)	Corporate Welding Manual procedures NW-02 and NW-10 provide requirements and instructions for the assignment of welder symbols. Existing program satisfactory; no supplement required
6.3.4, 6.3.5	Defines requirements for renewal and extension of welder qualification, requires re-qualification when the welder has not used the process for 3 months or more, except when the welder has been employed on some other welding process, the period may be extended up to 6 months by the Welding Manager. Re-qualification may also be required based on reason to question the ability of the welder.	Not specific to qualification of welders, but requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel (FSAR 17.3.2.11)	Corporate Welding Manual procedure NW-02 requires re-qualification when the process has not been used for 4 months, with no extension available based on use of other processes. Re-qualification may also be required based on reason to question the ability of the welder. Existing program satisfactory; no supplement required

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
6.4 Construction Welding 6.4.1	Defines responsibilities and requirements for preparation of Weld Data Report (WDR) based on design drawings, specifications and site procedures. WDRs are prepared by the weld manager, forwarded to QA/QC for review of essential requirements and hold points, then to the ANI who establishes his hold points and signs.	Requires that measures be established to assure that special processes, including welding, heat treating and NDE are appropriately controlled and are accomplished by qualified personnel using qualified procedures in accordance with applicable requirements. (FSAR 17.3.2.11)	Corporate Welding Manual Procedure NW-07 provides instruction on preparation of WDRs. WDRs are initiated by the PWE or his designees. WDRs are approved by the PWE, and Code WDRs forwarded to the ANII for review and to designate, at his option, additional hold points. QC hold points are designated by the preparer and the ANII. The existing program is satisfactory. However, since this work is not associated with Repair / Replacement activities, the Inspector must be qualified as ANI. Note that the Supplemental QA Requirements requires dual qualification (ANI, ANII) for this individual. The Supplemental QA Requirements also requires that <u>all</u> process control sheets associated with Code activities receives a review by the ANI prior to field issuance.
6.4.2	Requires all welding to be done using welders qualified by CP&L to CP&L WPS. All welding is to be accomplished using qualified procedures. Defines responsibilities for control of welding operation (including authority to assign or remove welders).	Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures (FSAR 17.3.2.11)	Corporate Welding Manual procedure NW-06 provides general welding instructions and technical requirements for carbon and low alloy steels, stainless steels and nonferrous welding at CP&L plants. This procedure requires that all such welding be performed by qualified welders (per NW-02) using qualified WPS (per NW-01) and with qualified materials (per NW-03). Under the Corporate Welding Manual, the PWE is responsible for welding program at site, including training, qualification and technical supervision of welders. Existing program satisfactory; no supplement required
6.4.3	Defines process for reviewing welder qualifications and assigning welders.	Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures (FSAR 17.3.2.11)	The PWE maintains and distributes the "Welder Qualification Status Report" (NW-02) The PWE is also responsible for reviewing and approving WDRs (NW-07) Existing program satisfactory; no supplement required

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
6.4.5, 6.4.6	Defines requires for control of welding materials, including returning unused welding materials and use / surveillance of heated ovens for coated electrodes.	Is not specific to weld materials, but requires that materials, parts and components be identified and controlled to prevent the use of incorrect or defective items (FSAR 17.3.2.6).	Corporate Welding Manual procedure NW-03 provides requirements for issuance and control of welding materials, usage of heated ovens and rod caddies for temperature controls of coated electrodes, returning unused and undamaged materials at the end of each shift, and for dispositioning / discarding welding materials. Existing program satisfactory; no supplement required
6.4.7	Defines responsibilities for notification of ANI; requires that hold point inspections be accepted by QA/QC and the ANI prior to any work proceeding past that point.	Requires that if mandatory inspection hold points are required, work shall not proceed beyond these hold points without the consent of the designated representative. (QAM 2.2, 3.4, 3.7)	<p>Work planning procedures and process control sheets incorporate hold points as appropriate for independent craft verification, QC, and for Code activities, for the ANII as well. Procedures require that mandatory QC hold points be accepted prior to work proceeding. (Ref. WCM-102, MMM-001, ADM-NGGC-0104). Existing procedures are adequate with respect to incorporating independent verification and QC hold points into work planning and process control sheets. Additional controls regarding ANI involvement be accomplished by requiring that all work packages associated with installation of Code items be clearly identified as "ASME Section III", and be reviewed by the ANI prior to field issuance.</p> <p>Note that, to avoid procedural conflicts, the Supplemental QA Requirements requires dual qualification (ANI / ANII) for this individual. The Supplemental QA Requirements also requires that <u>all</u> process control sheets associated with Code activities receives a review by the ANI prior to field issuance.</p>

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
6.4.8	Provides QA/QC visual inspection requirements for weld preps, fit-up, tack welds, root pass, etc; notification requirements in the event that an unacceptable condition is observed.	Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures (FSAR 17.3.2.11). Requires that work shall not proceed past mandatory inspection hold points without the consent of the designated representative. (QAM 2.2, 3.4, 3.7)	Corporate Welding Procedure NW-07 provides instruction on preparation of WDRs. WDRs are prepared by the PWE or his designees based on WPS and weld joint requirements. WDRs are approved by the PWE, and when applicable, forwarded to the ANII to designate, at his option, additional hold points. QC hold points are designated by the preparer and the ANII. Existing program is satisfactory, no supplement required.
6.4.9	Requires the welder identification symbol be applied next to the weld	Requires that measures be established to assure that identification of items are maintained by heat number, part number or other appropriate means, on the item or records traceable to the item throughout the fabrication, erection, installation and use of the item. (QAM 3.5, 3.7, 5.3, 5.4, 5.5, 10.5)	NGGC-MCP-0402 requires that traceability be accomplished at issuance either by markings or on issue documentation, as appropriate. For piping, verification of material identification is documented on process control sheets found in MMP-002. Additional controls regarding maintaining identification and traceability of materials is provided in ADM-NGGC-0104 and MMM-001. Corporate Welding Manual NW-04 also requires that material identification numbers be transferred when material is cut and that permanent markings be established in accordance with Code requirements. Adequate control of materials is provided with existing procedures and processes. No supplement required.
6.5 Repairs to Welds and Base Material 6.5.1 - 6.5.4	Provides requirements for repairs to welds and base materials in the event that unacceptable defects are identified. Requires notification of the ANI and discipline Welding Engineer and preparation of a Repair Weld Data Report (RWDR), subject to essentially the same process as for the WDR for the original weldment.	Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures (FSAR 17.3.2.11).	Corporate Welding Manual procedure NW-09 directs activities associated with repairs to welds and base metals (including grinding and machining); incorporates the development of a RWDR in a process which parallels that associated with the WDR. The Corporate Welding Manual provides a comparable process for repairs to welds and base metals; no supplement required.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
6.6 Control of Welding Equipment 6.6.1, 6.6.2	Provides requirements for operational checks at least every 3 months, notification / disposition of machines out of tolerance (including investigation of the use of the machine since the last sat operational check), initiation of corrective measures.	Defines requirements for measuring and test equipment (M&TE) control program, including calibration to a standard, establishment of calibration frequency, , M&TE control, etc. (QAM 8.0)	Corporate Welding Manual procedure NW-14 directs control of welding equipment, requires operational checks and maintenance at least every 12 months. Welding equipment is not used as extensively as during construction, and is generally subject to better handling by a smaller group of permanent plant personnel (vs. a large contract construction force). Existing program is in accordance with Section IX. Therefore, current controls on inspections & operational checks of welding equipment is acceptable; no supplement required.
6.7 Additional Process Control Forms	Allows for continuation form for process control sheets as necessary	N/A	Similar continuation form exists in NW-07 for WDRs / RWDRs. Not a critical item, but no supplement required at any rate.
7.0 Heat Treating Heat 7.1 - 7.7	Provides requirements and responsibilities for performing heat treatment in accordance with the Code.	Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures (FSAR 17.3.2.11).	Comparable requirements for post-weld heat treatment are found in Corporate Welding Manual procedure NW-08. Although the existing program is sufficient, this item is not an issue for Code welding associated with this project, as the subject welds are exempt from mandatory PWHT.
7.8 Bending and forming 7.8.1	Prohibits bending and forming of Class 1 materials at the construction site	N/A	N/A - no Code Class 1 items associated with this project.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
7.8.2	Requires that bending of Code Class 2 & 3 instrument tubing be accomplished in accordance with the Code, refers to Sections 2.0 and 5.0 (in the ASME QA Manual) for procedure development / approval and process control requirements, including QC / ANI interface.	Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures. (FSAR 17.3.2.11).	Process control sheets and bending requirements provided (either directly or by reference) in MMP-003. For Quality Class A material (such as Code related items), this includes independent craft and QC verification of critical attributes. No direct ANI involvement required per this procedure. Supplemental QA Requirements requires that Code related process control sheets are forwarded to the ANI / ANII prior to field issuance for his review and assignment of additional hold points.

8.0 Control of Equipment, Tools, Gauges and Instruments

8.1 Calibration 8.1.1 - 8.2.6

Provides responsibilities and requirements for equipment, tools, gauges and instruments specified for calibration control, including calibration at prescribed intervals against certified standards. Requires traceability between the calibrated item and calibration equipment be recorded on process control sheets. Provides for issuance of "Out of Calibration Notification" forms to evaluate corrective action and review activities for which the tool was last used since a sat calibration. Requires shorter calibration intervals or replacement of instruments frequently found out of calibration, and that calibration status and calibration due date be shown on or with the instrument, except for pressure gauges which are calibrated before use and after being returned to the shop. Prescribes requirements for storage, maintenance and record keeping of calibrated equipment, includes use of a certification record form and calibration stickers. Requires that pressure gauges used for hydrostatic testing be calibrated before and after each test or series of tests.

Defines requirements for measuring and test equipment (M&TE) control program, including calibration to a standard, establishment of calibration frequency, M&TE control, etc. (QAM 8.0)

Existing program satisfies Appendix B requirements and is the basis for support of the operating unit; is judged to be acceptable for this activity. No supplement required

The M&TE calibration and control program at Harris is prescribed in MMM-006. This program includes identification of M&TE equipment, specification of calibration interval, calibration against certified standards, use process control sheets, and traceability between calibration tool and calibrated instrument. This program also requires an evaluation of all equipment calibrated by an item found to be out of tolerance since its last satisfactory calibration. Relative to pressure gauges used for hydrostatic testing, MMP-012 requires that these gauges be calibrated before and after usage.

Storage, maintenance and record keeping of M&TE equipment addressed in MMM-006, including the use and control of certification records and calibration stickers. Relative to pressure gauges used for hydrostatic testing, MMP-012 requires that these gauges be calibrated before and after usage.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
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9.0 Inspection, tests and Nondestructive Examination

9.1 Training, Qualification and Certification 9.1.1 - 9.1.3

Provides responsibilities and requirements for QA/QC personnel. QA/QC inspection personnel shall be trained and qualified in accordance with Section 1.0 (of the ASME QA Manual) and the relevant Corporate Quality Assurance procedure.

Requires that personnel performing inspection review, examination and testing, evaluations of testing data and reporting of inspection and test results be qualified and certified based on CP&L commitment to Reg. Guide 1.58 (QAM 7.6)

Training and qualification is prescribed in the Corporate Quality Assurance Manual and accomplished as directed in Nuclear NDE Manual procedure NDEP-A. Program meets the requirements of Section XI, is acceptable for this scope given that all piping is Class 3, and that NDE consists of surface exams only.

9.2 Inspections and Tests 9.2.1 - 9.2.7

Provides requirements and general requirements for performance of inspections and tests. Requires that personnel be appropriately trained in preparation and control of inspection and test records, that inspections and tests are performed in accordance with approved procedures, that process control sheets be utilized, that the status of the inspected item be identifiable and traceable, that the ANI be notified when ANI hold points are reached, that work will not proceed past hold points until accepted, and that nonconforming work shall be stopped and corrective action initiated.

Requires that personnel performing inspection review, examination and testing, evaluations of testing data and reporting of inspection and test results be qualified and certified based on CP&L commitment to Reg. Guide 1.58 (QAM 7.6). Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures (FSAR 17.3.2.11). Requires that work shall not proceed past mandatory inspection hold points without the consent of the designated representative. (QAM 2.2, 3.4, 3.7)

Training and qualification addressed in NDEP-A (see item 9.1). This procedure also requires that for NDE procedures be based on ASME Section III and V as applicable, and requires that the ANI / ANII review and concur with any NDE procedures used for acceptance of Code work. Process control sheets for NDE activities are provided in the Nuclear NDE Manual procedure for that specific test or inspection, including hold points as appropriate. Corporate and site procedures ensure that hold points are accepted prior to work proceeding. NDEP procedures are provided to conform with ASME Code requirements as applicable. NDE procedures for LP and MT examinations are provided with acceptance criteria to ASME Section III requirements. No supplement required.

9.3 Nondestructive Examination 9.3.1

Requires personnel performing NDE to be trained, qualified and certified in accordance with SNT-TC-1A (1975), the Code and QA/QC procedures. Requires that only qualified personnel are assigned to perform NDE, and that procedures for NDE training, qualification and certification be prepared by a Level III. This section also provides an outline of the inspection procedure.

Requires that personnel performing inspection review, examination and testing, evaluations of testing data and reporting of inspection and test results be qualified and certified based on CP&L commitment to Reg. Guide 1.58 (QAM 7.6)

Nuclear NDE Manual procedure NDEP-A states that this NDE manual meets the requirements of SNT-TC-1A (1980, 1984 Ed) and Section XI. NDE Procedures require that personnel be appropriately trained. NDEP-A also includes a listing of minimum content for NDE procedures based on the type of activity being performed. Existing program is of comparable rigor. No supplement required.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
9.3.2, 9.3.3	Requires Level I and II personnel to be qualified and certified by an examination administered by a Level III; Level III to be qualified by an exam administered by a Level III and certified by the QA/QC manager. Allows the services of an outside agency to be used in the event that no Level III personnel exist within the organization.	States that prior to certification, NDE personnel shall have satisfactorily passed an examination administered under the jurisdiction of a certified Level III, and that CP&L Level III NDE personnel will be specified in CP&L's NDE Procedures (QAM 7.6).	NDEP-A requires certification of Level I and II to be performed by Level III, Level III certification to be performed by the Chief Mechanical / Materials Engineer. Use of an outside organization is not prohibited. Existing program is of comparable rigor. No supplement required
9.3.4 - 9.3.9	Requires training, qualification and certification of Levels I, II & III personnel to be in accordance with the applicable NDEPs and documented on appropriate certification forms. Requires records be maintained, that NDE personnel be re-certified at least once every 3 years, and that interpretation of results is accomplished by a Level II or III. Provides guidance for the preparation of NDE requests and reports.	States that prior to certification, NDE personnel shall have satisfactorily passed an examination administered under the jurisdiction of a certified Level III, and that CP&L Level III NDE personnel will be specified in CP&L's NDE Procedures. (QAM 7.6)	NDEP-A provides comparable requirements relative to training, qualification re-qualification and certification of personnel. Requires that records be maintained, and lists performance review requirements for maintenance of certification. Existing program is of comparable rigor. No supplement required
9.4 Inspection and Test Equipment	Requires that QA/QC inspection personnel be responsible for ensuring that inspection and test equipment is calibrated and has current calibration stickers.	Defines requirements for measuring and test equipment (M&TE) control program, including calibration to a standard, establishment of calibration frequency, M&TE control, etc. (QAM 8.0)	Inspection and test equipment is subject to the site M&TE control procedure, MMM-006. Existing program is sufficient regarding control of calibrated equipment.
9.5 Inspection and Test Records 9.5.1, 9.5.2	Requires that inspection and test records are prepared and maintained.	Defines requirements for maintain records of activities affecting quality, including inspection, test, audit and qualification records (QAM 14.3, 14.4)	NDEP-A requires that NDE records associated with Code activities be considered permanent QA records and be processed accordingly. Process control sheets and other required records are provided in the Nuclear NDE Manual as applicable. Existing program is of comparable rigor. No supplement required

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
9.5.3 - 9.5.7	Provides requirements for involvement of ANI, states that records are not considered complete until signed and dated by the ANI on the process control sheets, that the NDE Level III shall assure that NDE capability is proven by demonstration to the satisfaction of the ANI prior to the use of the procedure, and that the ANI may require re-qualification of NDE procedures or personnel as he deems necessary.	Requires that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures (FSAR 17.3.2.11). Requires that work shall not proceed past mandatory inspection hold points without the consent of the designated representative. (QAM 2.2, 3.4, 3.7)	NDEP-A requires that ANI review / concurrence be obtained for NDE procedures used for Code work. Requires that the Level III provides procedure qualification demonstration to the ANI when necessary. Also, provides that work may continue prior to ANI review of procedures, but that any such work would be at risk to ANI review. Existing program is of comparable rigor. No supplement required.
9.5.8, 9.5.9	Provides responsibilities and requirements for pressure testing, including QA/QC and ANI involvement, establishment of hold points, and review / approval of the process control sheets.	Requires that a test program be established to assure that structures, systems and components perform satisfactorily in service, and that this program include pre-operational tests and proof test prior to installation. (QAM 3.4, 3.7, 11.3)	Pressure testing requirements provided in MMP-012. Generally, these pressure test procedures are intended to meet Section XI pressure test requirements. Existing pressure test procedures are adequate, except that the test pressure specified for Section XI may be less conservative. Therefore, the Supplemental QA Requirements specify that more stringent Section III criteria be employed for pressure testing.
9.6 Code Data Report and Nameplate Stamping 9.6.1 - 9.6.4	Provides the process and requirements for the development and review of Code Data Reports and N Stamping.	No partial N stamping of existing equipment and the original N certificate program has been discontinued, so that originally installed equipment cannot be subject to the stamping process. No provision for N stamping is provided.	Supplemental QA Requirements defines a certification process wherein data reports are used to document field activities towards an overall system turnover. Whenever possible (i.e., for completed Code items supplied by an NPT supplier), these data reports will be the actual Code Data Reports for the items in question. For new construction and documentation of installation of preexisting piping for which records are no longer available, a form comparable to an NIS-2 will be employed. The ANI will ensure that the required data reports are completed and certified.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
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10.0 Nonconformance and Corrective Action

10.1 Scope 10.2 Reporting Non-conformances	Provides responsibilities and requirements for identification, reporting, segregation, investigation and resolution of non-conformances relating to Code conditions. Requires deficiencies in documentation and construction control, including Start-Up procedures, be reported as non-conformances. Utilized hold tags and labeling as required to indicate limits of hold. Defined review requirements for NCRs	Requires that measures be established to assure identification and control of incorrect or defective material, parts and components (QAM 5.3, 5.4, 5.5, 10.3, 11.4, 11.6). Requires that measures be established to conditions adverse to quality are promptly identified and corrected. (QAM 12.4, 12.5)	Procedures and processes provide measures (i.e., process control sheets, independent verification, STAR) to ensure that construction deficiencies are precluded from occurring. For conditions that are identified, CAP-NGGC-0001 provides direction on the initiation and processing of condition reports, such as would be generated in the event of non-conformances. Relative to receipt and control of materials, MCP-NGGC-0401 & 0402 ensure that defective items are not accepted and issued. These condition reporting and materials control processes provide effective programmatic means to ensure that discrepancies and non-conformances are captured and resolved.
10.3 Corrective Action 10.3.1 - 10.3.7	Provides instructions and guidance relative to the process for dispositioning NCRs. Requires verification and disposition of corrective action be performed by QA/QC prior to signing and closing the NCR.	Requires that measures be established to conditions adverse to quality are promptly identified and corrected. (QAM 12.4, 12.5)	CAP-NGGC-0001 provides instructions and requirements for dispositioning CRs. Incorporates requirements for event categorization, causal evaluation, disposition and corrective action. Existing program provides an effective means to capture and resolve non-conformances.



ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
10.4 Review of Nonconformance Report 10.4.1 - 10.4.4	Requires corrected items or documents to be re-inspected by a QA/QC inspector, and acceptance documented. Requires that closed out NCRs become QA records and transferred to the QA records vault. Requires that the ANI be apprised of any NCRs pertaining to the Code, and requires ANI signature prior to closing any such NCRs	Requires that measures be established to conditions adverse to quality are promptly identified and corrected. (QAM 12.4, 12.5). Does not require ANI involvement in review of construction related conditions adverse to quality.	The stated purpose of CAP-NGGC-0001 is to implement the NGG Corrective Action Management Policy and the requirements of 10 CFR 50, Appendix B, Criterion XVI. Disposition of any CRs related to construction requires that the item be corrected or formally evaluated as being acceptable. Review and approval of CRs goes up to and includes PNSC review, as appropriate. The CR process does not specifically require notification of the ANI for Code related items, although the formal evaluation process would tend to ensure his cognizance of any such issue. To further ensure the ANI's involvement on CRs related to Code items, the Supplemental QA Requirements requires that any such items be available to the ANI for verification of satisfactory resolution prior to turnover.
10.5 Receiving Inspection Software Deficiencies	Provides requirements for identification by QA/QC at receipt of documentation deficiencies, requires that an NCR be initiated for any such discrepancies that cannot be resolved by routine measures.	Requires that measures be established to assure identification and control of incorrect or defective material, parts and components (QAM 5.3, 5.4, 5.5, 10.3, 11.4, 11.6).	A similar receipt inspection process, including requirements for documentation review, are provided in MCP-NGGC-0401. Existing process provides sufficient assurance regarding resolution of documentation discrepancies. No supplement required.
11.0 Record Retention			
11.1	Defines responsibilities and requirements for records retention, requires that records generated by suppliers and contractors be transferred to CP&L for retention. Requires restriction of access to records storage areas and the use of a records sign-out log.	Defines requirements for maintaining records of activities affecting quality, including inspection, test, audit and qualification records (QAM 14.3, 14.4)	RMP-006 provides requirements for classification of QA records. Design change package, work records and other quality related documentation generated as a result of this project would be classified therein as a QA record and subject to permanent retention. Existing process is equivalent to the construction program. No supplement required.



ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
11.2 Records Index	Requires preparation of a record index to facilitate timely retrieval of records	Defines requirements for maintaining records of activities affecting quality, including inspection, test, audit and qualification records (QAM 14.3, 14.4)	CP&L maintains a computer-based index of records (NRCS) for indexing and retrieval of records Existing process is equivalent of the construction program. No supplement required.
11.3 Accumulation and Maintenance of Records	Provides requirements and responsibilities for accumulation and maintenance of records, including identification of retention period, prevention of loss, damage, etc. Requires access to records by the ANI	Defines requirements for maintain records of activities affecting quality, retention period and prevention of loss, damage, etc. (QAM 14.3, 14.4)	RMP-006 provides requirements for classification, submittal, control and maintenance of records. No supplement required.
12.0 ANI			
12.1.1 - 12.1.7	Summarizes the interface and requirements associated with the ANI for compliance with the Code. Requires that the ANI be given free access to all work locations under his jurisdiction, that he be provided adequate facilities and assistance, that he witness or otherwise verify required examinations and inspections, and that inspection services be subject agreement between CP&L and the AIA as required.	Requires that a program of inspection of activities be established. Does not address the ANI role in construction process (QAM 2.2, 5.3, 5.6).	Individual procedures address the role of the ANI in work activities and reviewing / approving process control sheets. Generally, these procedures are associated with Section XI activities and requirements for the ANII. Contractural agreement for the Inspector's services is provided as required for Section XI. Supplemental QA Requirements require that ANI be provided process control sheets for Code activities and items associated with this project prior to field issuance of the associated work package. Supplemental QA Requirements requires that the Inspector for the SFP project be dual qualified, as ANI / ANII.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
12.2 Document Accessibility 12.2.1 - 12.4.3	Requires that the ANI be provided free access to all information and records related to Code items, that the ANI review procedures utilized to implement Code requirements, that the ANI monitor the QA Program. Requires that the ANI be provided an opportunity to select holdpoints, and that he is provided sufficient notification of Code related work and testing. Requires that the ANI has authority to require re-qualification of procedures and personnel, that the ANI may witness or verify records of NDE, and that the ANI shall witness final hydrostatic testing required by the Code.	Requires that a program of inspection of activities be established. Does not address the ANI role in construction process.(QAM 2.2, 5.3, 5.6).	Role of ANI is provided in procedures and contractual agreements in accordance with Section XI requirements. Supplemental QA Requirements require that ANI be provided process control sheets for installation of Code items prior to field issuance of the associated work package.
13.0 Audits			
13.1 - 13.3	Provides responsibilities and requirements for Corporate QA audit activities. Defines the approach for auditing of the engineering, construction and start-up as being a comprehensive system of planned audits. Requires regularly scheduled audits on the basis of status and importance to ensure Code compliance. Requires written audit reports, that corrective action be taken as appropriate and verified as complete, and that follow-up audits and monitoring be conducted as necessary	Requires that a comprehensive system of audits be carried out. (QAM 4.11, 13.1, 13.4) .	For internal assessment, the Corporate approach towards auditing and quality assurance is founded on the principle that the line organization has the primary responsibility for quality and safety. Nuclear Assessment Section evaluates the performance and effectiveness of this process through independent assessment, and the Performance Evaluation Support Unit (PES) provides oversight of each plant's NAS by reviewing NAS assessment reports and perform a NAS effectiveness assessment at least once every 24 months. External audits of suppliers are performed in accordance with MCP-NGGC-0406. Existing program meets Appendix B requirements and is sufficient rigor for completion of construction.

ASME QA Manual Section No.	ASME QA Manual	Corporate Appendix B QA Program	Reconciliation
13.1.4	Requires that audit reports be maintained, and be made available to the ANI at his request.	Requires that audit results be documented and reviewed by management (QAM 4.11, 13.6)	Supplemental QA requirements require that all CRs associated with Code activities within this project be available to the ANI for verification of satisfactory resolution prior to turnover
13.2 Supplier Audits 13.2.1 - 13.3	Provides responsibilities and requirements for the auditing of activities by suppliers. For Code items, requires audits at least every 3 years. Requires audit results be made available to the ANI upon his request.	Requires that a comprehensive system of audits be carried out, and that audit results be documented and reviewed by management (QAM 4.11, 13.1, 13.4, 13.6)	MCP-NGGC-0406 provides requirements for audits of outside suppliers, includes specific requirements for suppliers of Code items, and requires auditing of suppliers at least every 3 years. Existing program provides equivalent assurance and rigor, no supplement required.
14.0 Review and Control of Manual			
<u>14.1 - 14.6</u>	Provides responsibilities and requirements for issuance, review and control of the ASME QA Manual. Requires that controlled copies be kept and maintained, and that revisions be reviewed and approved by the ANI.	Requires that activities affecting quality be prescribed by documented instructions, procedures etc. (QAM 6.0) and that measure be established to control the issuance of those documents (QAM 6.1, 6.34, 14.4)	Control, distribution and accountability of QA documents accomplished in accordance with RMP-002. Relative to the Alternative Plan, the AIA has formally reviewed and endorsed this plan as submitted to the NRC. The implementation of the Alternative Plan will be subject to ANI review as part of the modification review / approval process, including the Supplemental QA Requirements and the turnover / certification process it defines. However, since the authorization for the Alternative Plan comes from NRC approval, any revisions outside of typographical or minor administrative changes will require the review and approval of the NRC.

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GROUP BY MAIL LIST		
Page	NAME	1st
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1	-23	2
1	-33	3
1	-4	4
1	-53	
1	-63	

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CPBL - MPES
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APPLICABLE DESIGN DOCUMENTS

SEE CONC. 2165 & A17 REV. A

AS AUGMENTED BY See list

PREPARED BY WV CHECKED BY TRW
SUPERVISOR [Signature] APPROVAL [Signature]
DATE 10/29/82

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		REV'D TO CUST COMM. DUE 12/20/2011

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12-78	⚠	ISSUED FOR REVIEW.

DATE	REV	DESCRIPTION	BY
ISSUED BY		T.G.	6-13-78
CHECKED BY		J. J. J.	
APPROVED BY		J. J. J.	5-8-79
DATE	REV		

SHEARON HARRIS NUCLEAR POWER PLANT
WAKE COUNTY NORTH CAROLINA
SYS: SPENT FUEL UNIT-2

CUSTOMER CAROLINA POWER & LIGHT

JUST. P. O. NO. NY-33033
S.O. Q3304-SF ISO NO. 2-SF-1

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		SHOP NOTES: D-194
		SURF. PREP: NONE
		PAINT: NONE
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Rev	Date	Description	OWN	CHK	APPR'D		
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Base Drawing No.		2-SF-1					

STRESS CALC. 2850-39 & -40

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SPECIFICATION	MATERIALS	QTY	UNIT	STG	G-P	DESCRIPTION
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		SHOP NOTES: D-194
		SURF. PREP: NONE
		PAINT: NONE

WAKE COUNTY NORTH CAROLINA
SYS1 SPENT FUEL UNIT-2
6125 25 1/2
SOUTHWEST FABRICATING
& WELDING CO., INC. 1P
HOUSTON, TEXAS
CUSTOMER CAROLINA POWER & LIGHT
JUST. P. & NO. NY-435035
S.O. Q3304-SF 180 NO. 2-SF-1



HOUSTON, TEXAS
CUSTOMER CAROLINA POWER & LIGHT
CUST. P. O. NO. NY-435098
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Completion of Construction - 3 of 31

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HARRIS COUNTY, TEXAS
SYSTEM: SPENT FUEL - 2

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


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CP&L - HPES
FIELD DRAWING REVISION NO. _____
APPLICABLE DESIGN DOCUMENTS
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PREPARED BY Y. T. CHECKED BY TEW
SUPERVISOR Y. T. APPROVAL Y. T.

6 RELEASED FOR CONSTRUCTION *

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	SOUTHWEST FABRICATING
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SOUTHWEST FABRICATING
& WELDING CO., INC. :
HOUSTON, TEXAS

CUSTOMER 26.92-1-1A POLYMER 2.1.1.1

CUST. P.O. NO NY 43503
S.O. 23301-50 ISO NO 2-SF-14

MATERIAL TO BE SOLUTION ANNEALED TO A TEMPERATURE ABOVE 1900°C
RAPID COOL BY WATER QUENCH TO LESS THAN 800°F.

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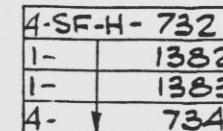
**SOUTHWEST FABRICATING
& WELDING CO., INC. :**
HOUSTON, TEXAS

CUSTOMER 26.92-12A POLAR 21-1-1

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(REVISE

STRESS CALC. 2850-42

ESR No. 95-00425

Revision No. 0

Page No. 10.13

BEVELS PER D-219					
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PIPE					
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F2-236-2

SEASON HATCH NUCLEAR POWER PLANT
ALBANY COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL

CATEGORY 3 STARS. SFL.
JUNE SECTION III 1971 ED. WITH
ACCORD THEN SUMMER 1975
S-OF NOTES: D-194
FBI/DOJ

2024.12.25

SS-3 12" x 10" SA 312/316 TP 304/316 END 30" SA 312/316 WELD TO 30" 1/16" (5% MIN DELTA FERRITE)															SA 403-NIP32-1/16 304 15" OR SA 403 WP 1/4-1/16 W/ARW W/100% RT E.D. SCAM 1.5% MIN. FERRITE D-FETS 304 304/316 W/100% RT SA 312 E 209/316															CERTIFICATE OF COMPLIANCE REQ'D (XAN) SA 312-11 SA 312-11 1/8" MIN 4/16 200 200 200															SSFR-SSA-263 150 200 150 (Now 200 200 200)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
SPEC															DATE															SCHED WALL															ASTM SPECIFICATION															TOTAL ST															LINE															SIZE															WT															TEE															STUB															CAP															SPECIFICATION															DATE															FACE															ASTM															WN															SO															BOB															LJ															SOCK															BLD															MACH															STUD															BO-TS															SPECIFICATION															WTS															WT															PT															DT															GAP															DESCRIPTION															DESIGNATION															PRESS															TEMP															PRESS														
PIPE															FITTINGS															FLANGES															CLASSES															PRESS															TEMP															PRESS																																																																																																																																																																																																																																																																																																																																																																																																																																																		



SPECIALTIES		DATE
NO.	DESCRIPTION	
98	1/2" x 1/4" LG TAP END STD 710 MYT MD RD MYT EA (12" 150°)	
12	1/2" x 1/4" LG TAP END STD 710 MYT MD RD MYT EA 12" 150°	
29	1/2" x 1/4" LG STD BOLT 710 MYT MD RD MYT EA (12" 150°)	
12	1/2" x 1/4" LG STD BOLT 710 MYT MD RD MYT EA (12" 150°)	
1	12" 150° AF BOLT 1/4"	
7	12" 150° AF BOLT 1/4"	
2	12" 150° AF BOLT 1/4"	

[illegible]

- ADD

Also Available on
Aperture Card



10/3/04		HANGER REV. QC. ISSUE	10/3/04	10/3/04
6/24/02		CHK TO R/O, COE = DOUBLE LANE NOT RE-OPENED	6/24/02	6/24/02

CP&L - HPES
FIELD DRAWING REVISION NO. _____

APPLICABLE DESIGN DOCUMENTS
 ON ONE 1/2 OF 412 REV 2

AS AUGMENTED BY _____

PREPARED BY AMC CHECKED BY TR
SUPERVISOR AMC APPROVAL ع.ع.ع.

DATE 10/27/53

• RELEASED FOR CONSTRUCTION •

11-27-79	A	CHRD TO G-42	WJW	BC
----------	---	--------------	-----	----

		ISSUE FOR INFO	
DATE	REV	DESCRIPTION 101 100	
			11-1-78

SEARCHED BY	C	11-3-73
SERIALIZED BY	DH	1-14-79
INDEXED BY	STW	2-4-75

73 000 000.00 CAR-2K5-G-412 4/13

--

**SOUTHWEST FABRICATING
& WELDING CO., INC.**

CUSTOMER CAROLINA POWER : 612-1-10

CUST. P. O. NO. NY 435035

CA-5-2

9905050237 - 011



Page No. 10.16

1 SF-W-710
-711
-712
-714
-715
-716
-717
138
138

A		ISSUED FOR CONSTR.							
		ESR 9500428							
Rev	Date	Description	DWN	CHK	APPRO				
Mod Sketch No.		SK-9500428-M-02G SHT. 1							
Base Drawing No.		2-SF-1G							





STRESS CALC. 2850-42

△ ADD

BEVELS PER D-215					
ITEM	SIZE	DEL	"C" DIM.	"TH"	"D" O
PIPE	12"	E	12.033"	.728"	.90"
FTG.					.75"
PIPE					
FTG.					.75"

APERTURE
CARD

Also Available on
Signature Card

4/15/24		ANGER REVISION	
4/15/24		ONE TO R/S, ONE LIT ONE OR ACCO	

CPCL - MPES
FIELD DRAWING REVISION NO. _____
APPLICABLE DESIGN DOCUMENTS

[illegible]

RECEIVED BY Sgt. C ORDERED BY W. J. O.
 APPROVED W. J. O.
 DATE 16, 29, 82

• RELEASED FOR CONSTRUCTION •

7/2/73	1	CHAS. L. JONES	1	CONFIDENTIAL
--------	---	----------------	---	--------------

DATE	1-3-79
TIME	1-7-79
LOCATION	1-1-79

FILED OCT 29 1964
FBI - NEW YORK
NEW YORK 100-21-3- (6-372 2/3)

**SOUTHWEST FABRICATING
& WELDING CO., INC.**

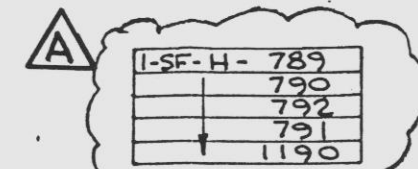
CUSTOMER CARLINE POWER & LIGHT

COAST. R. & G. NO. NY 4351135
SER. Q3303-FD 100 NO. 2-5F-112

FABRICATE 2 NEW
SPOOLS & INSTALL
NEW SUPPORT

2. COOL BY WATER BATH TO LESS THAN 800°F.

[illegible]



- REVISE

Revision No. 0Page No. 10.22

9905050237 - 06

A	ISSUED FOR CONSTR.			ES	127		
	ESR 9500425						
Rev	Date	Description	DWN	CHK	APPR		
Mod Sketch No.		SK-9500425-M-030 SHT. 1					
Base Drawing No.		2-SF-24					

STRESS CALC. 2850-41

FWD	R.F.	R.T.	MT/PT	U.T.	MYO
579			RT	FL	
582					
581					
582					
583					
584					
585					
586					
587					
588					

FW	N.P.T	RT	MT/PT	LT	MYD
594		RT	FL		
595					
596					
597					
598					
599					
596					

ADD

- REPLACE EXISTING
BOLTS & NUTS
(TYP. OF 3 VALVES)

FZ-236-2

EMERSON VALVE, NO. 100, FUEL SYSTEM
WAKE COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL UNIT 2
CAPACITY 3 TONS 92.
KING SECTIONS 127 E. WITH
ACCIDENTAL FUEL SYSTEMS 127
SIDE NOTES: D-194
FAINT: NONE
FIRE: NONE

SPECIALTIES			
NAME	DATE	TIME	Y
F	10/12/24	11:00 AM	11
	11/12/24	11:00 AM	11
	12/12/24	11:00 AM	11
	13/12/24	11:00 AM	11
	14/12/24	11:00 AM	11
	15/12/24	11:00 AM	11
	16/12/24	11:00 AM	11
	17/12/24	11:00 AM	11
	18/12/24	11:00 AM	11
	19/12/24	11:00 AM	11
	20/12/24	11:00 AM	11
	21/12/24	11:00 AM	11
	22/12/24	11:00 AM	11
	23/12/24	11:00 AM	11
	24/12/24	11:00 AM	11
	25/12/24	11:00 AM	11
	26/12/24	11:00 AM	11
	27/12/24	11:00 AM	11
	28/12/24	11:00 AM	11
	29/12/24	11:00 AM	11
	30/12/24	11:00 AM	11
	31/12/24	11:00 AM	11

[illegible]

APERTURE
CARD

Also Available on
Aperture Card

[illegible]

**SOUTHWEST FABRICATING
& WELDING CO., INC.**
HOUSTON, TEXAS

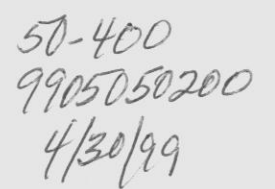
CUSTOMER CARDINAL, JAMES
CUST. P. O. NO. NY. 435035
.. 00301-ED .. 2-SF-24

50-400
9905050200
4/30/99

IN THE 10-12 MONTHS REQUIRED TO A 1.000 F. TEMPERATURE ABOVE 1000°F,
AND COOL BY 1000°F TO LESS THAN 500°F.

[illegible]

Completion of Construction - 2 of 41



MATERIAL TO BE SOLUTION ANNEALED TO A TEMPERATURE ABOVE 1900°F
RAPID COOL BY WATER QUENCH TO LESS THAN 800°F.

[illegible]

ESR No. 95-00425
Revision No. 0
Page No. 10.32

Base Drawing No. 2-56-30
STRESS CALC. 2850-39 9905050237-07

Diagram illustrating the repair of a pipe using a steel liner and epoxy resin. The diagram shows a cross-section of a pipe with a hole. A steel liner is inserted into the pipe, and the gap between the liner and the pipe is filled with epoxy resin. The diagram is labeled with the following components and dimensions:

- GRIND OFF SHARP CORNER
- STEEL LINER
- PIPE
- SET BACK UP - RINGS PLATE ALL AROUND (BY PIPE FABRICATOR)
- PIPE O.D.
- 45° MIN (SHOP WELD)
- 1/2"
- 1/2"

DETAIL "A"
TYP DETAIL OF WALL PENET.
THRU FUEL POOL & CANAL LINERS
NO SCALE

[illegible]

F3-261-2

SPECIAL AGENT IN CHARGE, FBI
 ALICE SMITH, NORTH CAROLINA
 STEWART FUEL UNIT 2
 CATEGORY 3 STUNTS, STL
 ALICE SMITH, 171 ED. WITH
 ALLENDA THEN SUMMER 1975
 INFO NOTES: D-194
 UNIT: ALICE

ALL FREE: NONE

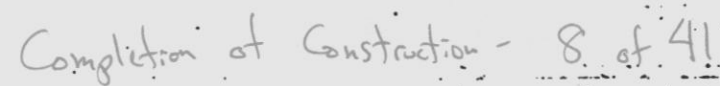
[illegible]

APERTURE CARD

Also Available on
Aperture Card



4/11/79	NO. <u>D</u>	ADD PRGNT. TO PAGE. RESUME FOR PMS	2nd
#13-79	<u>A</u>	CHRG TO G-410 95 ISSV FOR PMS	G2 R H
DATE	CHK	DESCRIPTION	BY CHA
APR 11 1979		<u>PMS</u>	1-16-79
APPROVED BY		<u>PMH</u>	2-4-80
FILE NO. OR			
9-45 PMH-508-7165-G-410-53			
SOUTHWEST FABRICATING & WELDING CO., INC. 14 MONTROSE, TEXAS			
CUSTOMER <u>INGELINE POWERGLUG-G</u>			
CUST. P.O. NO.	<u>NY 435035</u>		
E.G. <u>07364-1400</u>		NO <u>2-55-30</u>	

[illegible]

10-M-9500425-M-037

ON 2000

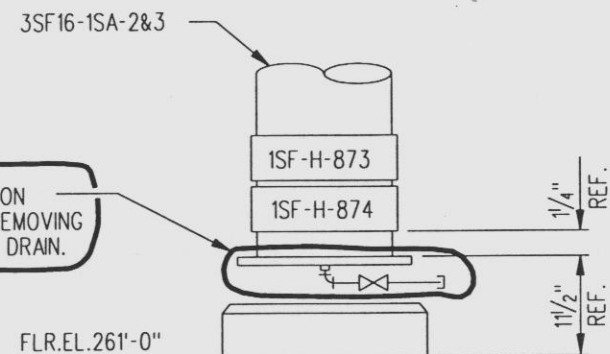
Completion of Construction - 9 of 41

BILL OF MATERIAL				
PC NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE
1	30'	16" STD. WT. SMLS. PIPE	SA-358	TP304
2	3	16" STD. WT. 90° LR ELL.	SA-403	WP304

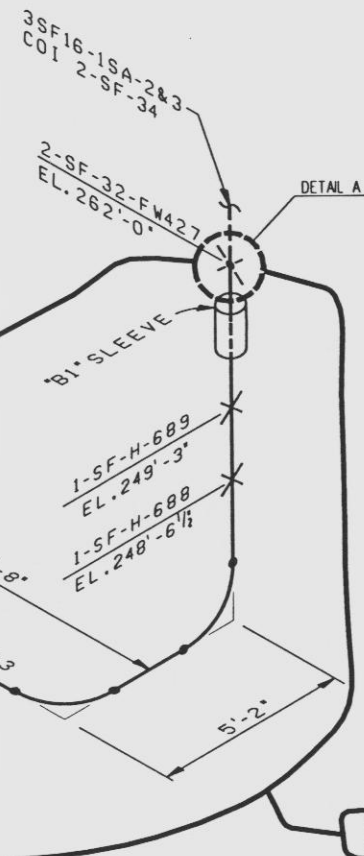
CLASS 1

BILL OF MATERIALS REFLECTS MATERIALS REQUIRED FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-5 FOR ACCEPTABLE MATERIAL SUBSTITUTION

REFER TO THE INSTALLATION
INSTRUCTIONS PRIOR TO REMOVING
THE BLANKING PLATE AND DRAIN.



DETAIL A
(NTS)



4-SF-H-692
1-SF-H-688
1-SF-H-689
1-SF-H-1118
1-SF-H-1370

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.

APERTURE
CARD
Also Available on
Aperture Card

NEW CONSTRUCTION

9905050237-09

STRESS CALC. 2850-40

PROFESSIONAL ENGINEER	ISSUED FOR CONSTRUCTION	REV	DATE	DESCRIPTION	CHK	APPRO
QUALITY LEVEL: SAFETY RELATED	ESR 9500425					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT		CP&L				
PLANT: SHEARON HARRIS UNIT 1		SCALE: NONE				
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FLOOR FL 236'-0"						
PLANT	2-SF-32	REV	3	SHT		
OWG NO.	SK-9500425-M-037					

ESR No. 95-00425

Revision No. 0

Page No. 10.34

50-400
9905050200
4/30/99

FILE: H2SF32.DGN

Completion of Construction
- w of 41

ESR No. 95-00425

Revision No. 0

Page No. 10.35

MATERIAL TO BE SOLUTION ANNEALED TO A TEMPERATURE ABOVE 1900°F,
RAPID COOL BY WATER QUENCH TO LESS THAN 800°F.

ITEM	QTY	UNIT	DESCRIPTION	ITEM	QTY	UNIT	DESCRIPTION	ITEM	QTY	UNIT	DESCRIPTION	ITEM	QTY	UNIT	DESCRIPTION	ITEM	QTY	UNIT	DESCRIPTION	ITEM	QTY	UNIT	DESCRIPTION
1	1	EA	PIPE 16" DIA. 15.303" THICK 150' LONG	2	1	EA	FLANGE 16" DIA. 15.303" THICK	3	1	EA	TEE 16" DIA. 15.303" THICK	4	1	EA	ELBOW 16" DIA. 15.303" THICK	5	1	EA	WELDING MATERIAL	6	1	EA	PAINT
7	1	EA	PIPE 16" DIA. 15.303" THICK 150' LONG	8	1	EA	FLANGE 16" DIA. 15.303" THICK	9	1	EA	TEE 16" DIA. 15.303" THICK	10	1	EA	ELBOW 16" DIA. 15.303" THICK	11	1	EA	WELDING MATERIAL	12	1	EA	PAINT
13	1	EA	PIPE 16" DIA. 15.303" THICK 150' LONG	14	1	EA	FLANGE 16" DIA. 15.303" THICK	15	1	EA	TEE 16" DIA. 15.303" THICK	16	1	EA	ELBOW 16" DIA. 15.303" THICK	17	1	EA	WELDING MATERIAL	18	1	EA	PAINT
19	1	EA	PIPE 16" DIA. 15.303" THICK 150' LONG	20	1	EA	FLANGE 16" DIA. 15.303" THICK	21	1	EA	TEE 16" DIA. 15.303" THICK	22	1	EA	ELBOW 16" DIA. 15.303" THICK	23	1	EA	WELDING MATERIAL	24	1	EA	PAINT

AS-BUILT

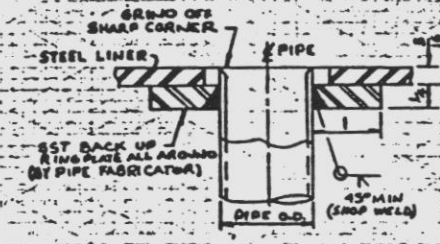
AS-BUILT INFO. ONLY
NO CONSTRUCTION
REQUIRED.

Rev	Date	Description	DWN	CHK	APPRD
1	10-11-77	ESR 95-00425			
2	10-11-77	Mod Sketch No. 34-9500425-M-038			
3	10-11-77	Base Drawing No. 2-SF-34			

STRESS CALC. 2850-40

ITEM	SIZE	DET.	C DIM.	T M D DIM.
PIPE	16"	15.303"	328	500
FLG	16"	15.303"	5	1250
PIPE	16"	15.303"	5	1250
FLG	16"	15.303"	5	1250

ITEM	SIZE	DET.	C DIM.	T M D DIM.
PIPE	16"	15.303"	328	500
FLG	16"	15.303"	5	1250
PIPE	16"	15.303"	5	1250
FLG	16"	15.303"	5	1250



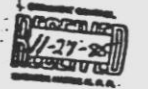
DETAIL A
TYP DETAIL OF WALL PENET.
THRU PUEL POOL & CANAL LINERS
NO SCALE

F3-261-2

ESR 95-00425
WILSON COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL UNIT 2
CATEGORY 3
ASME SECTION III, 1971 ED. WITH
ADDENDUM THRU SUMMER 1973
SHOP NOTES: D-194
PAINT: NONE
SURF. PREP: NONE

APERTURE
CARD

Also Available on
Aperture Card



DATE	REV.	DESCRIPTION	BY	CHKD
10-12-77	1	ADD REQ'S TO PIPE REUSE PER FAB		
10-12-77	2	CHG TO 4-110" IS		
10-12-77	3	CHG TO 4-110" IS		
10-12-77	4	CHG TO 4-110" IS		
10-12-77	5	CHG TO 4-110" IS		

SOUTHWEST FABRICATING
& WELDING CO., INC. (S)
HOUSTON, TEXAS
CUSTOMER: CAROLINA POWER FLIGHT CO.
CUST. P.O. NO. NY-435035
S.O. Q3304-FH ISO NO. 2-SF-34

58-400
9905050200
4/30/99

9905050237-10 C



ESR No. 95-00425

Revision No. 1Page No. 10.36

STRESS CALC, 2850-39

-REVISE

-ADD

BEVELS PER D-219					
ITEM	SIZE	DEL	C Dwg	TM	D Dwg
PIPE	16"	F	1.328	.328	.500
FT4"		S	1	.5	.250
PIPE	12"	S	12.053	.328	.500
FT6"		S	5	.5	.250

[illegible]

F2-236-2

1' BACON HATCHES NUCLEAR TOWER PLANT
ADAMS COUNTY, NORTH CAROLINA
ITEM: SPENT FUEL UNIT 2
LIBRARY 3 SPENCER ST.
SOME SECTION III 1971 ED WITH
ADDITIONAL JUNE SUMMER 1975
TOP NOTES: D-196
PAINT: NONE
SURF. FEEL: NONE

SPECIALTIES		AGE
NUMBER	AGE GROUP & TYPE	
3A	25" 25" 35" LG TAN LWB STRO 70" HWT 45" MO HWT 1A (12" 150")	
12	1" 2" 4" 8" LG TAN LWB STRO 70" HWT 45" MO HWT 1A 16" 150"	
4	12" 150" RF RING 63RT	
2	16" 150" RF RING 63RT	


SHIP METAL LIST			
LINE	DATE IN	QTY	
1	FOLEY-206-09	4	
1		12	
1		11	

9	57.256-19.424N-657	10
2	57.256-19.424N-657	11
	6	12

- SNIP LINE -

10/3/74	⚠	HANGER REV QC ISSUE	10/3/74	⚠
11/2/74	⚠	ARC HANGER TIE-ROD WAS MISSING FOR 1/2" DIA. x 8" LONG	11/2/74	⚠
11/14/74	⚠	CHK TO R/S LONG LIFT	11/14/74	⚠

CRIM. MPEI
 FIELD DRAWING REVISION NO. _____
 APPROXIMATE DESIGN DIMENSIONS
 IN INCHES 24.4 0 413 REV 0
 ALUMINUM OF HA-155 Chk 1-45
 # 1697 Part 2-55-0000
 PREPARED BY HJ CHECKED BY (P)
 APPROVED BY Jtm APPROVAL EFP
 DATE 2-23-43

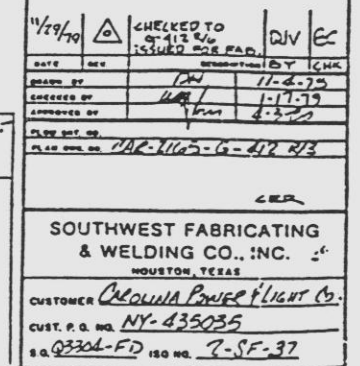
• RELEASED FOR CONSTRUCTION •				
7-18-77		CHK'D TO G-872 1/2 ISSUE FOR ARO	DW	BC
DATE	REF.	DESCRIPTION	BY	CWA
ISSUED BY		DW	11-6-79	
REVIEWED BY		266	1-17-79	
APPROVED BY		1009	2-1-80	

2AP-2165-G-417 E/S

**SOUTHWEST FABRICATING
& WELDING CO., INC.**
HOUSTON, TEXAS

CONTAINER CAROLINA POWER & LIGHT CO
CUST. P. O. NO. NY-435039
L.S. Q3304-FD 120 W. 2-SF.35

[illegible]



SECTION HARRIS NUCLEAR FOR S-1
RAME COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL UNIT 2
CATEGORY 3 STINKS S-L
RAME SECTION III 1971 EQ. WITH
APPENDIX THEN JUNE 1975
SHOP NOTES: D-194
PAINT: NONE
SURE PROP. NONE

[illegible]

SK-9500425-M-042

DWG. NO.

Completion of Construction - 14 of 91

BILL OF MATERIAL

PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	2	14" STD. WT. 90° SR. ELL.	SA-403	WP304	
2	1	14" 150° RFWN. FLANGE	SA-182	F304	
3	1	14" 150° RING GASKET 1/8" THK.			
4	12	1" X 5/4" LG. STUD BOLT	SA-564	630-H1100	(17-4 PH)
5	88	1" HVT. HX. NUT	SA-194	6	
6	2	16" STD. WT. 90° SR. ELL.	SA-403	WP304	
7	1	16" X 14" ECC. REDUCER	SA-403	WP304	
8	1	16" STD. WT. SMLS. PIPE	SA-358	TP304	CLASS 1
9	1	14" STD. WT. SMLS. PIPE	SA-358	TP304	CLASS 1
10	1	14" X 1" 3000° SOCKLE	SA-182	F304	
11	2	16" 150° RFWN. FLANGE	SA-182	F304	
12	64	1" X 4 1/4" LG. TAP END STUD BOLT	SA-564	630-H1100	(17-4 PH)
13	4	16" 150° RING GASKET 1/8" THK.			
14	1	16" 150° RFWN. BLIND FLANGE	SA-182	F304	
15	2	16" 150° BUTTERFLY VALVE	SA-182	F304	
16	1	1" SCH. 40S SMLS. PIPE	SA-312	TP-304	
17	1	1" NPT 3000° PIPE CAP	SA-182	F304	
18	1	1" GATE VALVE			

BILL OF MATERIAL QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

1-SF-H-1368

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. VALVE END TO END DIMENSIONS INCLUDE GASKET THICKNESS.
3. CUT AND ROTATE THE EXISTING 16" TEE (90° CW). REMOVE THE EXISTING 16" 150° WN FLANGE FROM THE OUTLET END OF THE TEE. FLANGE MAY BE REUSED AS ITEM 11.

APERTURE
CAP

NEW CONSTRUCTION

9905050237-14

STRESS CALC. 2850-41

ISSUED FOR CONSTRUCTION (SR 9500425)		TEC	1
REV	DATE	DESCRIPTION	CHK APPR
PROFESSIONAL ENGINEER			
QUALITY LEVEL:			
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT		CP&L	
PLANT: SHEARON HARRIS UNIT 1		SCALE: NONE	
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS PUMP A TO FP STRAINER A			
PLANT DWG NO.: 2-SF-38	REV: 4	SHT:	
SK-9500425-M-042			

ESR No. 95-00425

Revision No. 0

Page No. 10.42

50-400
9905050200
4/30/99

FILE: H2SF38.DGN

SK-9500425-M-055

ON 0000

Completion of Construction - 15 of 41



BILL OF MATERIAL				
PC NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE
1	1	16" STD. WT. 90° LR ELL.	SA-403	WP304
2	1	12" X 1" -3000° SOCKLE	SA-182	F304
3	2	1" SCH.80 SMLS. PIPE	SA-376	TP304
4	1	1" -3000° SW 90° ELL	SA-182	F304
5	1	1" -3000° SCRD. CAP	SA-182	F304
6	1	1" GATE VALVE		

BILL OF MATERIAL QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

1-SF-H-673
1-SF-H-674
1-SF-H-675
1-SF-H-676
1-SF-H-677
1-SF-H-678

NOTES:


1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.

APERTURE
CARD

Also Available on
Aperture Card

9905050237-15

STRESS CALC. 2850-40

STRESS ENG. 2636-40					
A	/	ISSUED FOR CONSTRUCTION ESR 9500425		TEC	
REV	DATE	DESCRIPTION		OWN	CHK
PROFESSIONAL ENGINEER:					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT				CP&L	
PLANT: SHEARON HARRIS UNIT 1				SCALE: NONE	
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FLOOR EL. 236'-0"					
PLANT DWG. NO.		2-SF-67	REV.		3
		SK 9500425 M-055	SHT.		

ESR No. 95-00425

Revision No. 0

Page No. 10.60

NEW CONSTRUCTION

NEW CONSTRUCTION

REFER TO THE INSTALLATION
INSTRUCTIONS PRIOR TO REMOVING
THE BLANKING PLATE AND DRAIN.

FLR. EL. 236'-0"

DETAIL A (INTS)
ELEVATION LOOKING SOUTH

50-400
9905050200
4/30/99

FILE: H2SF67.DGN

c:\p1\h2sf67.dgn Dec. 23, 1998 09:46:06

SK-9500425-M-057 Dwg. No.

BILL OF MATERIAL					
PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	16	1/2" X 10 1/4" LG. STUD BOLT	SA-564	630-H1100	(17-4 PH)
2	32	1/2" HVT. HD. NUT	SA-194	6	
3	2	12"-300" RING GASKET 1/8" THK.			

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY

Completion of Construction - 17 of 41

FOR CONSTRUCTION REQUIREMENTS
SEE SUPPORT DRAWING

1-SF-H-808
1-SF-H-809
1-SF-H-810
1-SF-H-813

NOTES:
1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.

APERTURE
CARD

Also Available on
Aperture Card

9905050237-17

STRESS CALC. 2850-48

ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION	DATE	CHK	APPROV
PROFESSIONAL ENGINEER:					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT			CP&L		
PLANT: SHEARON HARRIS UNIT 1			SCALE: NONE		
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM EL. 236'-0"					
PLANT DWG NO.: 2-SF-69	REV: 4	SHT:			
SK-9500425-M-057					

ESR No. 95-00425

Revision No. 0

Page No. 10.62

50-400
9905050200
4/30/99

FILE: H2SF69.DGN

SK-9500425-M-058

Completion of Construction - 18 of 41

BILL OF MATERIAL				
PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE
1	16	1/4" X 10 1/4" LG. STUD BOLT	SA-564	630-H1100 (17-4 PH)
2	32	1/4" HVY. HEX. NUT	SA-194	6
3	2	12"-300" RING GASKET 1/4" THK.		

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY

FOR CONSTRUCTION REQUIREMENTS
SEE INDIVIDUAL SUPPORT DRAWINGS

ADD

SF-H-819
SF-H-822
SF-H-1378

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.

APERTURE
CARD

Also Available on
Aperture Card

9905050237-18

REPLACE EXIST.
BOLT MATERIALS

INSTALL

ESR No. 95-00425

Revision No. 0

Page No. 10.63

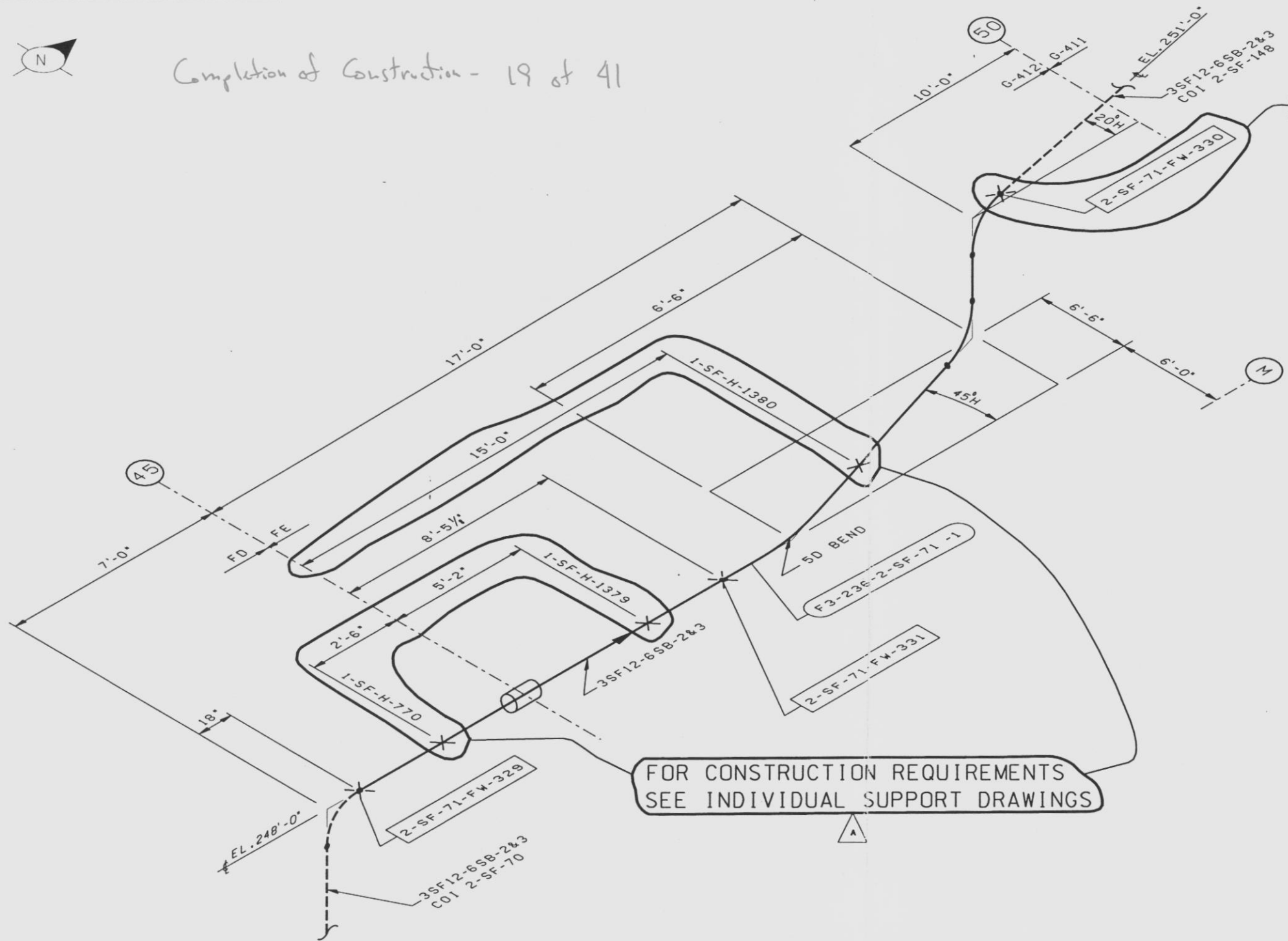
STRESS CALC. 2850-46

REV	DATE	DESCRIPTION	OWN	CHK	APPROV
A	1/1	ISSUED FOR CONSTRUCTION ESR 9500425			
PROFESSIONAL ENGINEER					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT				CP&L	
PLANT: SHEARON HARRIS UNIT 1				SCALE: NONE	
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM EL. 236'-0"					
PLANT DWG NO.: 2-SF-70		REV: 3		SHEET:	
SK 9500425-M-058					

50-400
9905050200
4/30/99

FILE: H2SF70.DGN

Completion of Construction - 19 of 41



FOR CONSTRUCTION REQUIREMENTS
SEE INDIVIDUAL SUPPORT DRAWINGS

CONSTR. REQ'D

CONSTR. REQ'D

- 1-SF-H-770
- 1-SF-H-1379
- 1-SF-H-1380

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.

APERTURE
CARD

Also Available on
Aperture Card

9905050237-19

STRESS CALC. 2850-46

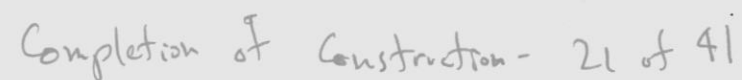
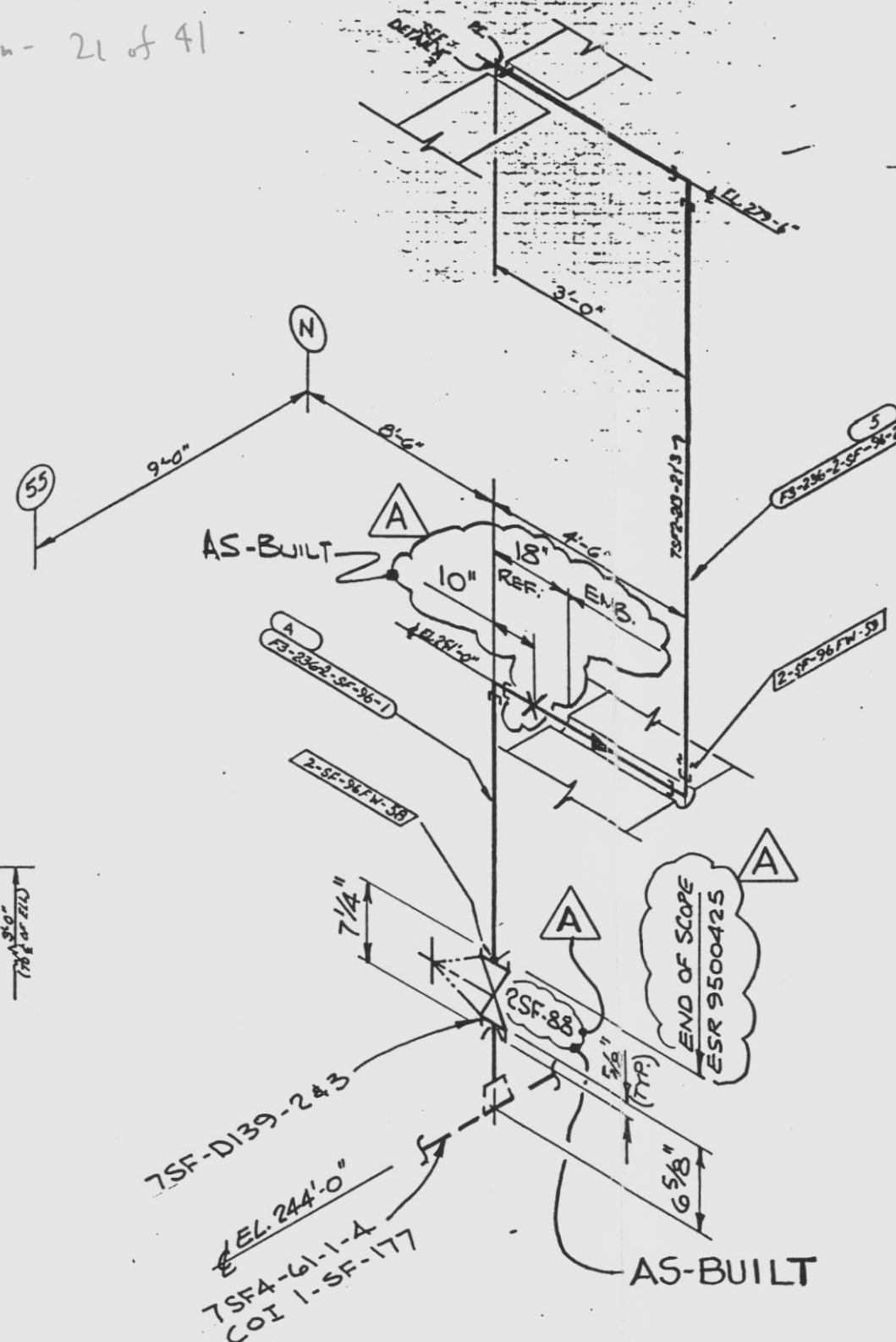
50-400
9905050200
4/30/99

ESR No. 95-00425

Revision No. \emptyset

Page No. 10.64

REV	DATE	DESCRIPTION	CHK	APP
A		ISSUED FOR CONSTRUCTION ESR 9500425		
PROFESSIONAL ENGINEER:				
QUALITY LEVEL:				
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT				CP&L
PLANT: SHEARON HARRIS UNIT 1				SCALE: NONE
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM EL. 236'-0"				
PLANT DWG NO.: 2-SF-71		REV: 4		SHT:
SK-9500425-M-059				

Page No. 10.78

A		AS-BUILT INR. ONLY	82	07	
		ESR 9500425			
Rev	Date	Description	CWN	CHK	APPR
Mod Sketch No.		3K-9500425-M-070			
Base Drawing No.		2-SF-90			

SOCK/W PIPING
ALL ENDS SQE (XAN)

[illegible]

AREA-F3-236

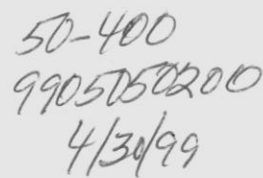
ANSI B31.1, 1973 W/ADDENDUM THRU
SUMMER, 1973

SHIP NOTES: D-179

SUBJ. PREP: NONE
PRNT: NONE

[illegible][illegible][illegible]

A diagram illustrating the attraction between a magnet and a magnetic material. A circular magnet with the letter 'N' inside is shown on the left. A compass needle, which is a magnetic material, is shown on the right, pointing towards the magnet.



Page No. 10,79

SS-3		A		405		A 3/2 1/2 77 300 1/2 16 5963		A 403 W2304124 541.5 OR A 403 W2304124 311.6 W W/574 100.76 6110 5001																7394-210-2-3		125		200		121		11			
								</																											

9905050237 - 22

BEVELS PER D-219					
ITEM	SIZE	DET.	"C" DIM.	"T" M	"O" DIM.
PIPE	4"	A	1.044"	.207	.375"
FTG ¹		A	1.044"	.207	.250"
PIPE					
FTG ²					.250"

A		AS-BUILT INFO. ONLY		ES	17			
		ESR 9500425						
Rev	Date	Description	DWN	CHK	APPR'D			
Mod Sketch No.		SK-9500425-M-071						
Base Drawing No.		2-SF-97						

[illegible]

CATEGORY-7- (STAINLESS STEEL)


ANSI B31.1, 1973 "ADDENDUM TMB3
SUMMER, 1973

SHOP NOTES: D-179

SURF. PREP: NONE

ANAL. Calcd. for $C_{10}H_{10}O$: C, 88.10%; H, 7.39%. Found: C, 88.1%; H, 7.4%.

[illegible][illegible]

5/2/84 DATE	 REV.	CHG'D TO LONG LIST 3-DRMS. 416, 415, 411	CHG'D 3-DRMS. 416, 415, 411
		DESCRIPTION	

CPCL - MPES
FIELD DRAWING REVISION NO. _____
APPLICABLE DESIGN DOCUMENTS
DE SIG 2465 & 416.413.440 REV 271
AS AUGMENTED BY PER "G" DRAWINGS.

PREPARED BY ARF CHECKED BY Q
SUPERVISOR CLB APPROVAL EAT
DATE 5.25.01

• RELEASED FOR CONSTRUCTION •

1-8-79		CHECKED TO G4H 75 (OPEN) G 1/7 79 AND ISSUED LC
--------	---	--

DATE	BY	DESCRIPTION
ISSUED BY	<i>Boh</i>	1-5-79
SUPPLIED BY	<i>R. J. [unclear]</i>	1-11-79
APPROVED BY	<i>[unclear]</i>	2-21-76

PLATE NO. 1
TS. 24-25, 26-27, 28-29, 30-31, 32-33, 34-35, 36-37, 38-39, 40-41, 42-43, 44-45, 46-47, 48-49, 50-51, 52-53, 54-55, 56-57, 58-59, 60-61, 62-63, 64-65, 66-67, 68-69, 70-71, 72-73, 74-75, 76-77, 78-79, 80-81, 82-83, 84-85, 86-87, 88-89, 90-91, 92-93, 94-95, 96-97, 98-99, 100-101, 102-103, 104-105, 106-107, 108-109, 110-111, 112-113, 114-115, 116-117, 118-119, 120-121, 122-123, 124-125, 126-127, 128-129, 130-131, 132-133, 134-135, 136-137, 138-139, 140-141, 142-143, 144-145, 146-147, 148-149, 150-151, 152-153, 154-155, 156-157, 158-159, 160-161, 162-163, 164-165, 166-167, 168-169, 170-171, 172-173, 174-175, 176-177, 178-179, 180-181, 182-183, 184-185, 186-187, 188-189, 190-191, 192-193, 194-195, 196-197, 198-199, 200-201, 202-203, 204-205, 206-207, 208-209, 210-211, 212-213, 214-215, 216-217, 218-219, 220-221, 222-223, 224-225, 226-227, 228-229, 230-231, 232-233, 234-235, 236-237, 238-239, 240-241, 242-243, 244-245, 246-247, 248-249, 250-251, 252-253, 254-255, 256-257, 258-259, 260-261, 262-263, 264-265, 266-267, 268-269, 270-271, 272-273, 274-275, 276-277, 278-279, 280-281, 282-283, 284-285, 286-287, 288-289, 290-291, 292-293, 294-295, 296-297, 298-299, 300-301, 302-303, 304-305, 306-307, 308-309, 310-311, 312-313, 314-315, 316-317, 318-319, 320-321, 322-323, 324-325, 326-327, 328-329, 330-331, 332-333, 334-335, 336-337, 338-339, 340-341, 342-343, 344-345, 346-347, 348-349, 350-351, 352-353, 354-355, 356-357, 358-359, 360-361, 362-363, 364-365, 366-367, 368-369, 370-371, 372-373, 374-375, 376-377, 378-379, 380-381, 382-383, 384-385, 386-387, 388-389, 390-391, 392-393, 394-395, 396-397, 398-399, 400-401, 402-403, 404-405, 406-407, 408-409, 410-411, 412-413, 414-415, 416-417, 418-419, 420-421, 422-423, 424-425, 426-427, 428-429, 430-431, 432-433, 434-435, 436-437, 438-439, 440-441, 442-443, 444-445, 446-447, 448-449, 450-451, 452-453, 454-455, 456-457, 458-459, 460-461, 462-463, 464-465, 466-467, 468-469, 470-471, 472-473, 474-475, 476-477, 478-479, 480-481, 482-483, 484-485, 486-487, 488-489, 490-491, 492-493, 494-495, 496-497, 498-499, 500-501, 502-503, 504-505, 506-507, 508-509, 510-511, 512-513, 514-515, 516-517, 518-519, 520-521, 522-523, 524-525, 526-527, 528-529, 530-531, 532-533, 534-535, 536-537, 538-539, 540-541, 542-543, 544-545, 546-547, 548-549, 550-551, 552-553, 554-555, 556-557, 558-559, 560-561, 562-563, 564-565, 566-567, 568-569, 570-571, 572-573, 574-575, 576-577, 578-579, 580-581, 582-583, 584-585, 586-587, 588-589, 590-591, 592-593, 594-595, 596-597, 598-599, 600-601, 602-603, 604-605, 606-607, 608-609, 610-611, 612-613, 614-615, 616-617, 618-619, 620-621, 622-623, 624-625, 626-627, 628-629, 630-631, 632-633, 634-635, 636-637, 638-639, 640-641, 642-643, 644-645, 646-647, 648-649, 650-651, 652-653, 654-655, 656-657, 658-659, 660-661, 662-663, 664-665, 666-667, 668-669, 670-671, 672-673, 674-675, 676-677, 678-679, 680-681, 682-683, 684-685, 686-687, 688-689, 690-691, 692-693, 694-695, 696-697, 698-699, 700-701, 702-703, 704-705, 706-707, 708-709, 710-711, 712-713, 714-715, 716-717, 718-719, 720-721, 722-723, 724-725, 726-727, 728-729, 730-731, 732-733, 734-735, 736-737, 738-739, 740-741, 742-743, 744-745, 746-747, 748-749, 750-751, 752-753, 754-755, 756-757, 758-759, 760-761, 762-763, 764-765, 766-767, 768-769, 770-771, 772-773, 774-775, 776-777, 778-779, 780-781, 782-783, 784-785, 786-787, 788-789, 790-791, 792-793, 794-795, 796-797, 798-799, 800-801, 802-803, 804-805, 806-807, 808-809, 810-811, 812-813, 814-815, 816-817, 818-819, 820-821, 822-823, 824-825, 826-827, 828-829, 830-831, 832-833, 834-835, 836-837, 838-839, 840-841, 842-843, 844-845, 846-847, 848-849, 850-851, 852-853, 854-855, 856-857, 858-859, 860-861, 862-863, 864-865, 866-867, 868-869, 870-871, 872-873, 874-875, 876-877, 878-879, 880-881, 882-883, 884-885, 886-887, 888-889, 890-891, 892-893, 894-895, 896-897, 898-899, 900-901, 902-903, 904-905, 906-907, 908-909, 910-911, 912-913, 914-915, 916-917, 918-919, 920-921, 922-923, 924-925, 926-927, 928-929, 930-931, 932-933, 934-935, 936-937, 938-939, 940-941, 942-943, 944-945, 946-947, 9

**SOUTHWEST FABRICATING
& WELDING CO., INC. ,
HOUSTON, TEXAS**

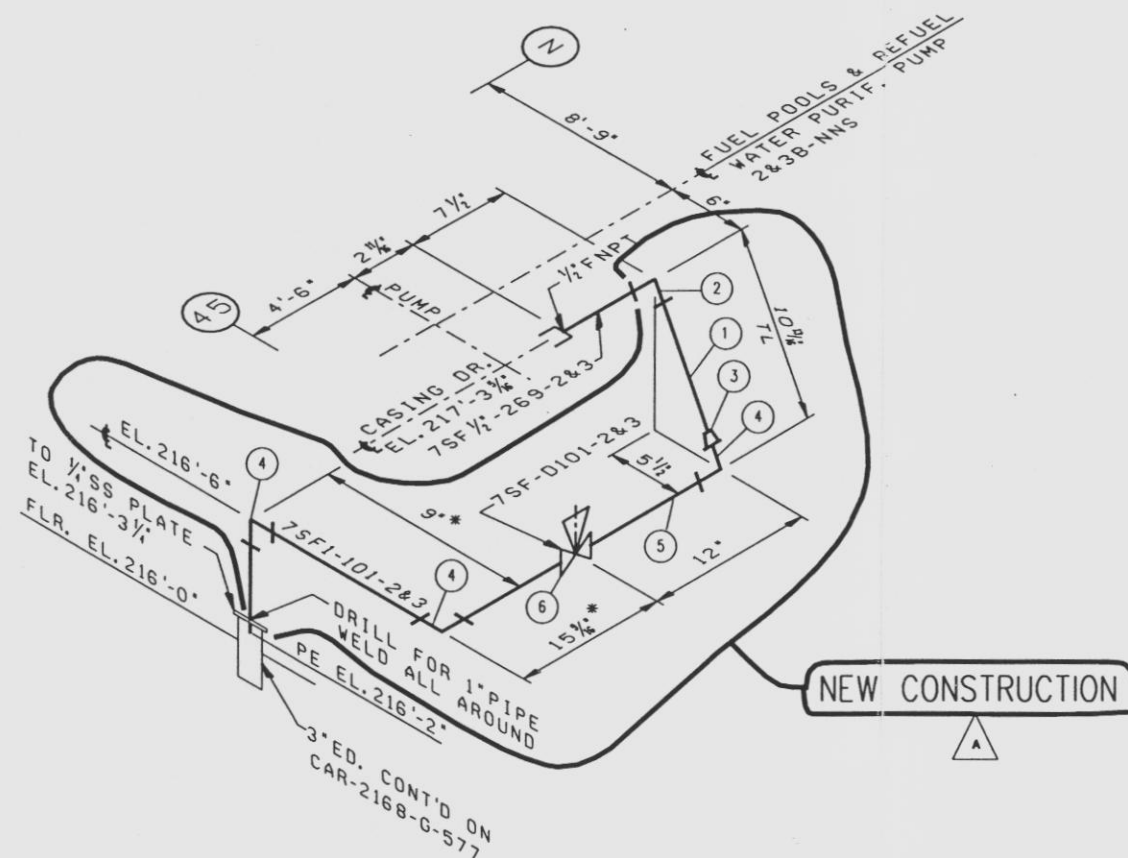
CUSTOMER Carolyn Brown, Light Co
CUST. P.O. NO. NY 435035
S.O. 3304 FE ISO NO. 2-SF-97

SK-9500425-M-072

ON 10/10



Completion of Construction - 23 of 41



BILL OF MATERIAL				
PC NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE
1	1	1/2" SCH.40 SMLS PIPE	SA-312	TP304
2	1	1/2"-3000" SW 90° ELL.	SA-182	F304
3	1	1" X 1/2"-3000" RED.INSERT	SA-182	F304
4	3	1"-3000" SW 90° ELL.	SA-182	F304
5	4	1" SCH.40 SMLS PIPE	SA-312	TP304
6	1	1" DIAPHRAGM VALVE		

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. DISASSEMBLE DIAPHRAGM VALVES BEFORE WELDING.
- DESIGN DIMENSIONS ARE BASED ON AS-BUILT LOCATIONS OF PUMP & DRAIN HUB.

APERTURE
CARDAlso Available on
Aperture Card

9905050237

23

ESR No. 95-00425

Revision No. 0

Page No. 10.80

REV	DATE	DESCRIPTION	DRN	CHK	APPRO
A	11	ISSUED FOR CONSTRUCTION ESR 9500425			REC
PROFESSIONAL ENGINEER:					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT					
PLANT: SHEARON HARRIS UNIT 1					
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS & REFUEL WTR. PURI. PUMP B CASING DRN.					
PLANT: 2-SF-100					
DWG NO.: SK-9500425-M-072					

FILE: H2SF100.DGN

Completion of Construction - 24 of 41

PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	3'	1" SCH.40S SMLS PIPE	SA-312	TP304	
2	19'	1" SCH.40S SMLS PIPE	A-312	TP304	
3	1	1/2" FNPT X 1" -3000* SW RED.CPLG.	SA-182	F304	
4	4	1" -3000* SW 90° ELL.	A-182	F304	
5	2	1" -3000* SW TEE	A-182	F304	
6	1	3/8" SCH.40S SMLS PIPE	SA-312	TP304	
7	2	1" X 1/2" -3000* RED.INSERT	SA-182	F304	
8	3	1" GATE VALVE			
9	2	1" -3000* SW 90° ELL.	SA-182	F304	

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

NEW CONSTRUCTION

1-SF-H-1358
1-SF-H-1359
1-SF-H-1360
1-SF-H-1397

APERTURE
CARDAlso Available on
Aperture Card

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. ROTATE VALVE STEM 15° UP FROM HORIZONTAL.

9905050237-24

THIS DRAWING INCORPORATES ISOMETRICS
2-SF-105, 2-SF-107 & 2-SF-109.
STRESS CALC. 2850-66

REV	DATE	DESCRIPTION	OWN	CHK	APPROV
1		ISSUED FOR CONSTRUCTION ESH 9500425			TEC

PROFESSIONAL ENGINEER:	
QUALITY LEVEL:	
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT	CP&L
PLANT: SHEARON HARRIS UNIT 1	SCALE: NONE
TITLE:	FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS PUMP & STRAINER A DRAINS

PLANT DWG NO.: 2-SF-105	REV: 1	SHT:
SK-9500425-M-073		

ESR No. 95-00425

Revision No. 0

Page No. 10.81

50-400
9905050200
4/30/99

SK-9500425-M-074

Completion of Construction - 25 of 41

NEW CONSTRUCTION

BILL OF MATERIAL				
PC NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE
1	3'	1" SCH.40S SMLS PIPE	SA-312	TP304
2	19'	1" SCH.40S SMLS PIPE	A-312	TP304
3	1	1/2" FNPT X 1" -3000* SW RED.CPLG.	SA-182	F304
4	4	1"-3000* SW 90° ELL.	A-182	F304
5	2	1"-3000* SW TEE	A-182	F304
6	1	3/8" SCH.40S SMLS PIPE	SA-312	TP304
7	2	1" X 1/2" -3000* RED.INSERT	SA-182	F304
8	3	1" GATE VALVE		
9	2	1"-3000* SW 90° ELL.	SA-182	F304

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

- 1-SF-H-1361
- 1-SF-H-1362
- 1-SF-H-1363
- 1-SF-H-1396

APERTURE CARD
Also Available
Aperture

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. ROTATE VALVE STEM 15° UP FROM HORIZONTAL

9905050237-25

THIS DRAWING INCORPORATES ISOMETRICS
2-SF-106, 2-SF-108 & 2-SF-110.
STRESS CALC. 2850-67

A	1	ISSUED FOR CONSTRUCTION ESR 9500425	REC	7	
REV	DATE	DESCRIPTION	CHK	APP	
PROFESSIONAL ENGINEER:					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT			CP&L		
PLANT: SHEARON HARRIS UNIT 1			SCALE: NONE		
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS PUMP & STRAINER B DRAINS					
PLANT DRG NO.: 2-SF-106			REV: 0		SK:
SK-9500425-M-074					

ESR No. 95-00425

Revision No. ϕ

Page No. 10.82

50-400
9905050200
4/30/99

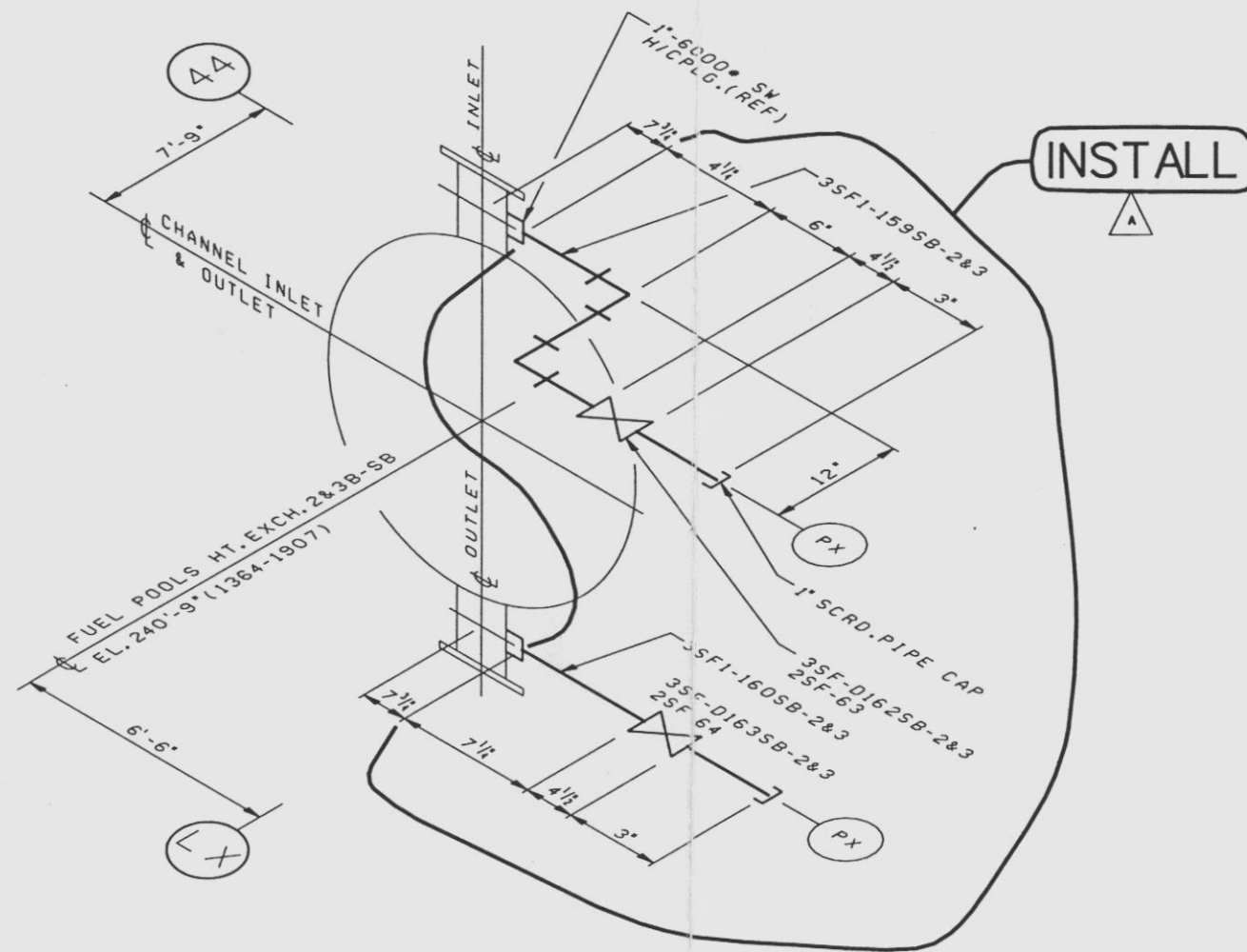
DRILL FOR 1" PIPE
WELD ALL AROUND
PE EL.236'-2"
3" ED. CONT'D ON
CAR-2168-G-577
FLR. EL.236'-0"
TO 1/2" SS PLATE
EL.236'-2 1/2"

SK-9500425-M-077

ON NO.



Completion of Construction - 26 of 41



BILL OF MATERIAL				
PC NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE
1	3'	1" SCH. 40S SMLS PIPE	SA312	TP304
2	2	1"-3000" SW 90° ELL.	SA182	F304
3	2	1"-3000" SCRD PIPE CAP	SA182	F304
4	2	1" DIAPHRAGM VALVE		

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

APERTURE
CARD

Also Available on
Aperture Card

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.

9905050237-26

ESR No. 95-00425

Revision No. 0

Page No. 10.85

REV	DATE	DESCRIPTION	CHK	APPROV
A	1/1	ISSUED FOR CONSTRUCTION ESR 9500425	TEC	02
PROFESSIONAL ENGINEER:				
QUALITY LEVEL:				
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT			CP&L	
PLANT: SHEARON HARRIS UNIT 1			SCALE: NONE	
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS HEAT EXCHANGER B TRIM				
PLANT Dwg No.: 2 SF-113			REV: 0	
SK-9500425-M-077				

FILE: H2SF113.DGN

SK-9500425-M-078

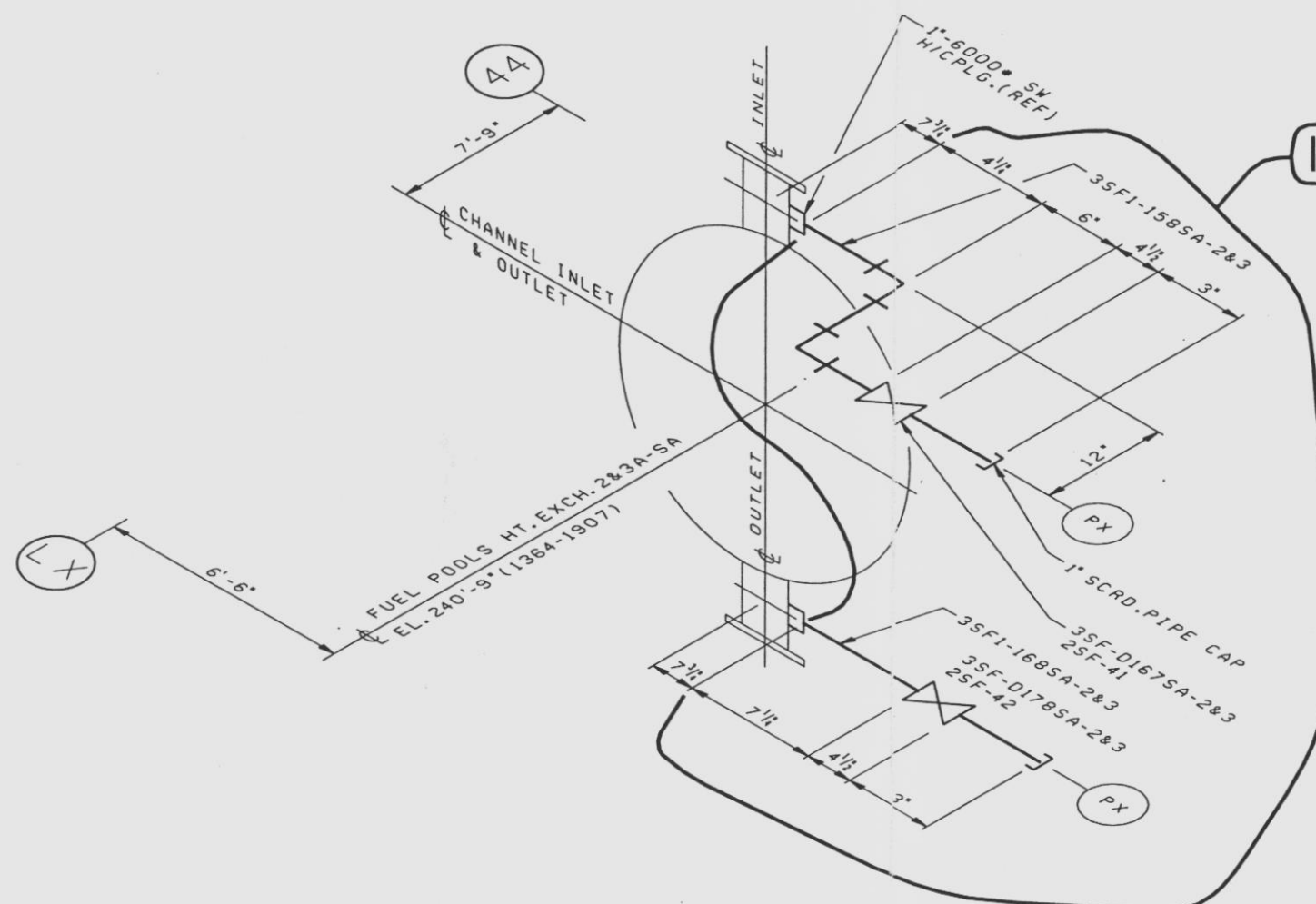
DWG. NO.



Completion of Construction - 27 of 91

BILL OF MATERIAL					
PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	6'	1" SCH.40S SMLS PIPE	SA312	TP304	
2	2	1"-3000° SW 90° ELL.	SA182	F304	
3	2	1"-3000° SCRD PIPE CAP	SA182	F304	
4	2	1" DIAPHRAGM VALVE			1364-5216

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION



APERTURE CARD

Also Available on Aperture Card

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.

9905050237-27

50-400
9905050200
4/30/99

ESR No. 95-00425

Revision No. \emptyset

Page No. 10.86

ISSUED FOR CONSTRUCTION	REG.
REV. DATE	DESCRIPTION
PROFESSIONAL ENGINEER	QUALITY LEVEL
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT	CP&L
PLANT: SHEARON HARRIS UNIT 1	SCALE: NONE
TITLE:	FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS HEAT EXCHANGER A TRIM
PLANT DWG. NO.: 2-SF-114	REV: 0
SK-9500425-M-078	

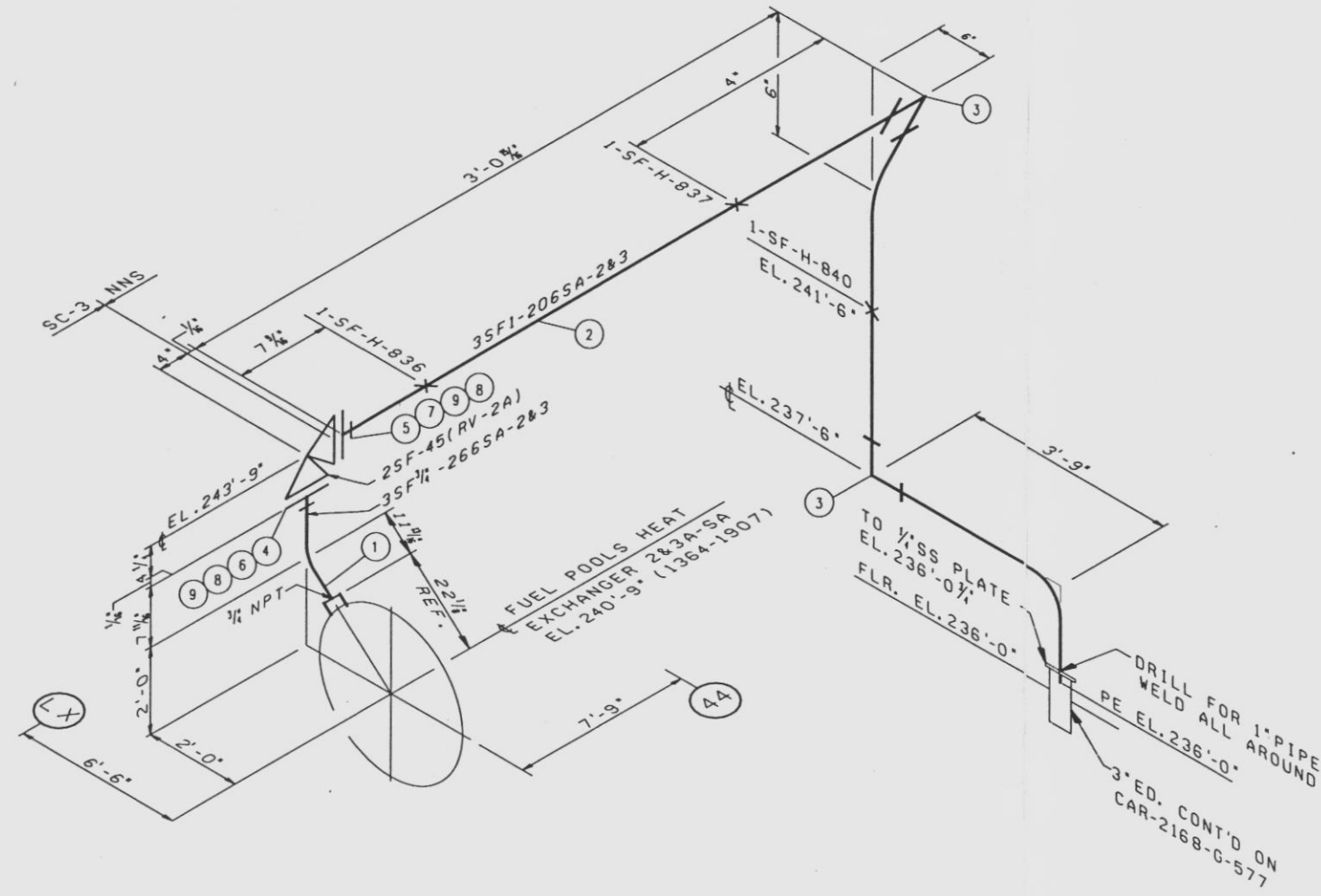
FILE: H2SF114.DGN

SK-9500425-M-079

DRG. NO.



Completion of Construction - 28 of 41



BILL OF MATERIAL					
PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	2'	3/4" SCH. 40S SMLS PIPE	SA-312	TP304	
2	16'	1" SCH. 40S SMLS PIPE	A-312	TP304	
3	2	1"-3000" SW 90° ELL.	A-182	F304	
4	1	1/2"-150" RF SW FLANGE	SA-182	F304	
5	1	1"-150" RF SW FLANGE	A-182	F304	
6	1	1/2"-150" RING GASKET			
7	1	1"-150" RING GASKET			
8	8	1/2" X 2 1/2" LG. STUD BOLT	SA-564	630-H1100	(17-4 PH)
9	16	1/2" HVT. HD. NUT	SA-194	6	

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

1-SF-H-836
1-SF-H-837
1-SF-H-840

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. BENDS MAY BE SUBSTITUTED FOR FITTINGS. BEND RADIUS TO BE 5D.

APERTURE
CARD
Also Available on
Aperture Card

9905050237-28

ENTIRE ISO.
IS NEW CONSTRUCTION

STRESS CALC. 2850-59

REV	DATE	DESCRIPTION	DRN	CHK	APPROV
A	1/1	ISSUED FOR CONSTRUCTION (FOR 9500425)			REG
PROFESSIONAL ENGINEER:					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT			CP&L		
PLANT: SHEARON HARRIS UNIT 1			SCALE: NONE		
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS HEAT EXCHANGER & RV PIPING					
PLANT DRG NO.: 2-SF-115			REV: 0		SH:
SK-9500425-M-079					

ESR No. 95-00425
Revision No. 0
Page No. 10.87

FILE: H2SF115.DGN

SK-9500425-M-080

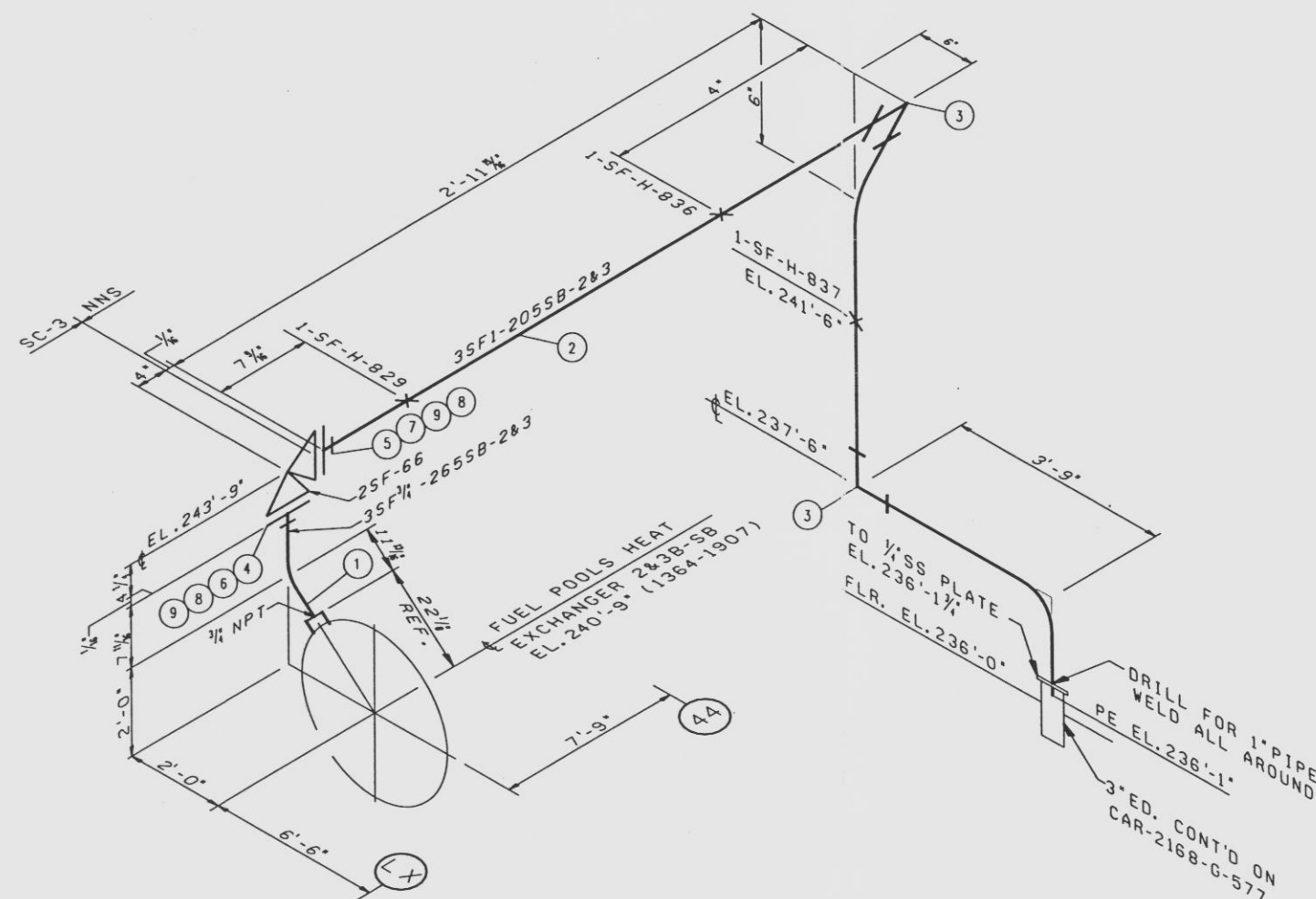
DWA. NO.

BILL OF MATERIAL

PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	2'	3/4" SCH.40S SMLS PIPE	SA-312	TP304	
2	16'	1" SCH.40S SMLS PIPE	A-312	TP304	
3	2	1"-3000° SW 90° ELL.	A-182	F304	
4	1	1/2"-150° RF SW FLANGE	SA-182	F304	
5	1	1"-150° RF SW FLANGE	A-182	F304	
6	1	1/2"-150° RING GASKET			
7	1	1"-150° RING GASKET			
8	8	1/2" X 2 1/4" LG. STUD BOLT	SA-564	630-H1100	(17-4 PH)
9	16	1/2" HVY. HD. NUT	SA-194	6	

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

Completion of Construction - 29 of 41



NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. BENDS MAY BE SUBSTITUTED FOR FITTINGS. BEND RADIUS TO BE 5D.

APERTURE
CARDAlso Available on
Aperture Card

9905050237-29

ENTIRE ISO.
IS NEW CONSTRUCTION

STRESS CALC. 2850-53

ESR No. 95-00425

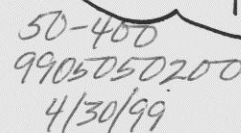
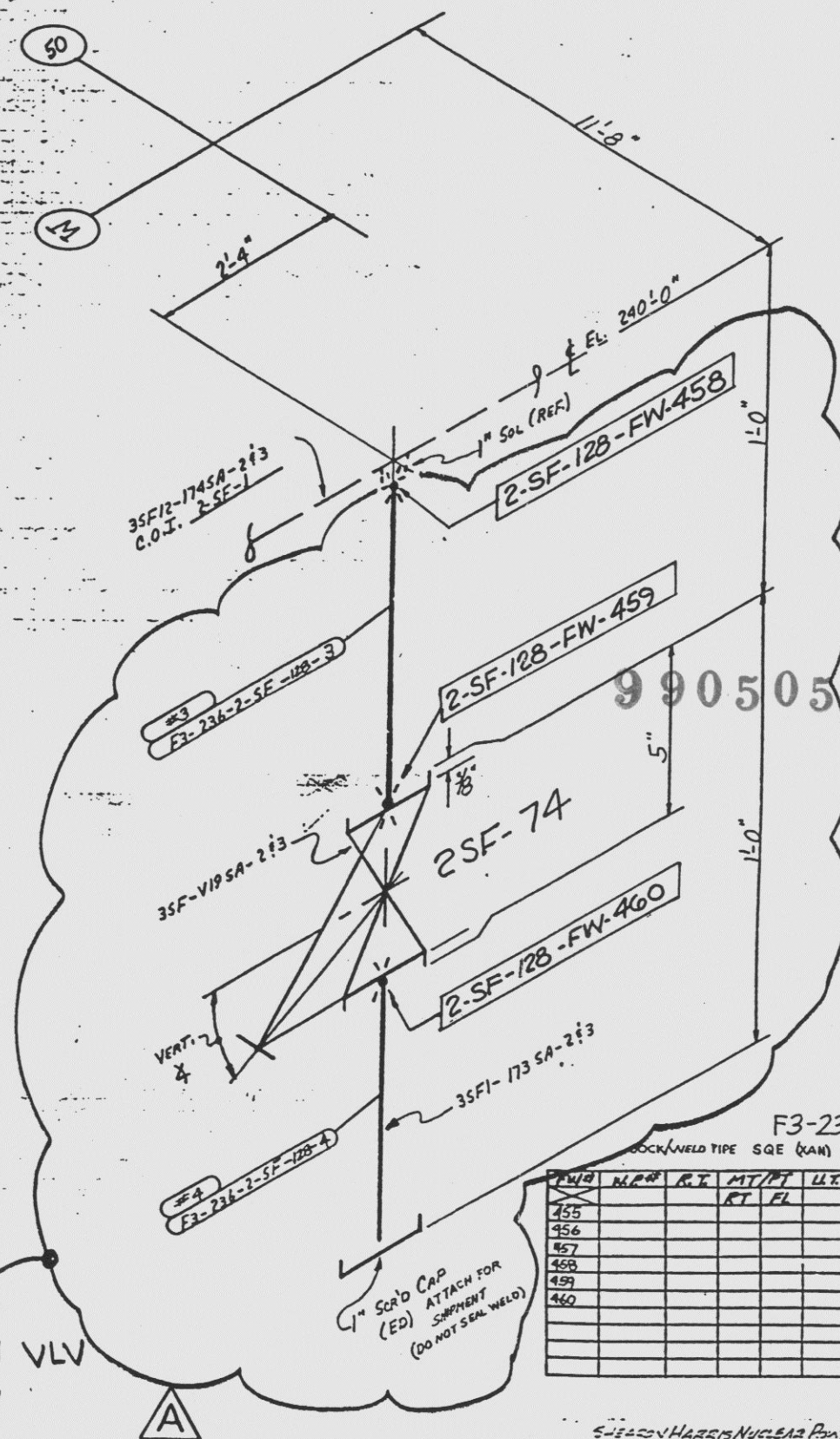
Revision No. 0

Page No. 10.88

REV	DATE	DESCRIPTION	DRN	CHK	APPROV
A	1/1	ISSUED FOR CONSTRUCTION ESR 9500425			REG
PROFESSIONAL ENGINEER:					
QUALITY LEVEL:					
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT				CP&L	
PLANT: SHEARON HARRIS UNIT 1				SCALE: NONE	
TITLE:					
FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FUEL POOLS HEAT EXCHANGER B RV PIPING					
PLANT DWC NO.: 2-SF-116		REV: 2		SHT:	
SK-9500425-M-080					

FILE: H2SF116.DGN

Page No. 10.94

[illegible][illegible]

SEASON HARRIS NUCLEAR POWER PLANT
HARRIS COUNTY, NORTH CAROLINA
STATION SPENT FUEL UNIT 2

CATEGORY 3 SPINLS. STL.
LONG SECTION III 1971 ED. WITH
CORRECTIONS THROUGH SUMMER 1973

SPENT NOTES: D-194

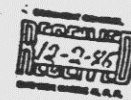
FAIR: [REDACTED] NONE



S.C.S. SPENT: NONE

[illegible][illegible]

37-30
APERTURE
CARD

**Also Available on
Aperture Card**



10/26/68		 CHG. TO F/B COL. & COLUMBIA	
DATE	REV	DESCRIPTION	
FIELD DRAWING REVISION NO.			
APPLICABLE DESIGN DOCUMENTS SEE SHEET 2165. & 412 REV B			
AS SUBMITTED BY			
PREPARED BY		CHECKED BY	
SUPERVISOR		APPROVAL	
DATE			
• RELEASED FOR CONSTRUCTION •			
7-27-77		CHG. TO 6-42 % ASSUMED FOR FAS	01/1 02/1
DATE	REV	DESCRIPTION	
REVISY BY	DATE	DATE	
CHG. BY	DATE	DATE	
APPROVED BY	DATE	DATE	
1-25-79 1-30-79 2-10-79			

**SOUTHWEST FABRICATING
& WELDING CO., INC.**
HOUSTON, TEXAS

CUSTOMER CAROLINA PENCE & LIGHT CO.
CUST. P. & NO. NY 435035
S.O. Q 4124-FF IRO NO. 2-SF-128

**SOUTHWEST FABRICATING
& WELDING CO., INC.** (R)
HOUSTON, TEXAS

CUSTOMER CAROLINA POWER & LIGHT CO.
CUST. P.O. NO. NY 435035
S.G. Q4124-ED ISO NO. 2-SF-130



50-400
9905050200
4/30/99

[illegible]

INSTALL



A		ISSUED FOR CONSTR.				EJ	DG		
		ESR 9500425							
Rev	Date	Description	CWN	C-K	APPROV				
Mod Sketch No.	SK-9500425-M-088 SUP.								
Basis Drawing No.	2-SF-132								

[illegible]

SHERMAN HADDS NUCLEAR POWER PLANT
 WAKE COUNTY, NORTH CAROLINA
 SYSTEM: SPENT FUEL UNIT 2
 CATEGORY 3 STILLS, STG.
 ASME SECTION III 1971 ED. WITH
 ADDENDA THRU SUMMER 1978
 S&C NO. D-194
 S&C NONE
 CURF. PRP. NONE

[illegible]

3/24/95	Δ	CR 100 RY 8 : Lmt Lmt Ntmtmt F CAL Lmtt amtt	HC
DATE	REV.	DESCRIPTION	BY

CPL - MPES
FIELD DRAWING REVISION NO. _____

APPLICABLE DESIGN DOCUMENTS
ON DATE 2165 0 12 NOV 8
AS AGREED BY 830-643

PREPARED BY HK CHECKED BY [Signature]
SUPERVISOR WJC APPROVAL [Signature]
DATE 4-6-02

• RELEASE FOR CONSTRUCTION •

100-77	A	100-77	100-77
--------	---	--------	--------

DATE	REV.	DESCRIPTION	BY
08/01/77		001	F-22-77

APPROVED BY	<i>[Signature]</i>	1-30-77
APPROVED BY	<i>[Signature]</i>	4-5-80

DATE FILED 1962-DEC-6-4 12 43

SOUTHWEST FABRICATING

A WELDING CO., INC.

CUSTOMER Carolina Buser - Loret Ce

NY 42025
9474-ED 2-2F-132

SK-9500425-M-089

DWG. NO.

BILL OF MATERIAL

PC. NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	35'	4" SCH. 40S SMLS. PIPE	SA-312	TP-304	
2	4	4" SCH. 40S 90° LR. BW. ELL.	SA-403	WP304	
3	4	4" SCH. 40S 90° SR. BW. ELL.	SA-403	WP304	
4	5	4" SCH. 40S 45° BW. ELL.	SA-403	WP304	
5	3	4" SCH. 40S BW. TEE	SA-403	WP304	
6	8	4"-150° RFWN. FLANGE	SA-182	F304	
7	16	5/8" X 3 1/2" LG. STUD BOLT	SA-564	630-H1100	(17-4 PH)
8	96	5/8" Hvy. HX. NUT	SA-194	6	
9	32	5/8" X 5 1/2" LG. STUD BOLT	SA-564	630-H1100	(17-4 PH)
10	8	4"-150° RING GASKET 1/2" THK.			

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY.
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION.

1-SF-H-699

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. VALVE END TO END DIMENSIONS INCLUDE GASKET THICKNESS.

APERTURE
CARD

Also Available on
Aperture Card

9905050287-33

ENTIRE DRAWING IS
NEW CONSTRUCTION

STRESS CALC. 2850-50

ESR No. 95-00425

Revision No. 0

Page No. 10.103

ISSUED FOR CONSTRUCTION	TEC	37
REV. DATE	DESCRIPTION	OWN. CHK. APPROV.
PROFESSIONAL ENGINEER		
QUALITY LEVEL:		
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT		CP&L
PLANT: SHEARON HARRIS UNIT 1		SCALE: NONE
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FLOOR EL. 236'-0"		
PLANT DWG. NO.: 2-SF-146	REV: 2	SHT:
SK-9500425-M-089		

50-400
9905050200
4/30/99

FILE: H2SF146.DGN

060-M-5240056-SK

ON 0000

Completion of Construction - 34 of 41

BILL OF MATERIAL

PC NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	1	12"-300" RFWN. ORIFICE FLANGE	SA-182	F304	
2	16	1/4" X 7" LG. STUD BOLT	SA-564	630-H100	(17-4 PH)
3	32	1/4" H.VY. HX. NUT	SA-194	6	
4	2	12"-300" RING GASKET 1/4" THK.			
5	2	3/4" X 1/2" RED. SWAGE (B.E.P.)	SA-182	F304	
6	2	1/2" X 3000" SW 90° ELL.	SA-182	F304	
7	1	1/2" SCH.80 SMLS. PIPE	SA-312	TP-304	
8	2	1/2" GATE VALVE			
10	24	1/2" X 3 1/2" LG. TAP END STUD	SA-564	630-H100	(17-4 PH)
11	24	1/4" H.VY. HX. NUT	SA-194	6	
12	2	12"-150" RF RING GASKET			

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY.
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION.

1-SF-H-775
1-SF-H-777
1-SF-H-796
1-SF-H-798

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. VALVE END TO END DIMENSIONS INCLUDE GASKET THICKNESS.

ESR No. 95-00425

Revision No. 0

Page No. 10.104

INSTALL ORIFICE PIPING

STRESS CALC. 2850-46

ISSUED FOR CONSTRUCTION	REV. 12
DESCRIPTION	DATE
PROFESSIONAL ENGINEER:	
QUALITY LEVEL:	
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT	CP&L
PLANT: SHEARON HARRIS UNIT 1	SCALE: NONE
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FLOOR EL.236'-0"	
PLANT Dwg No.: 2-SF-148	REV. 3
SK-9500425-M-090	

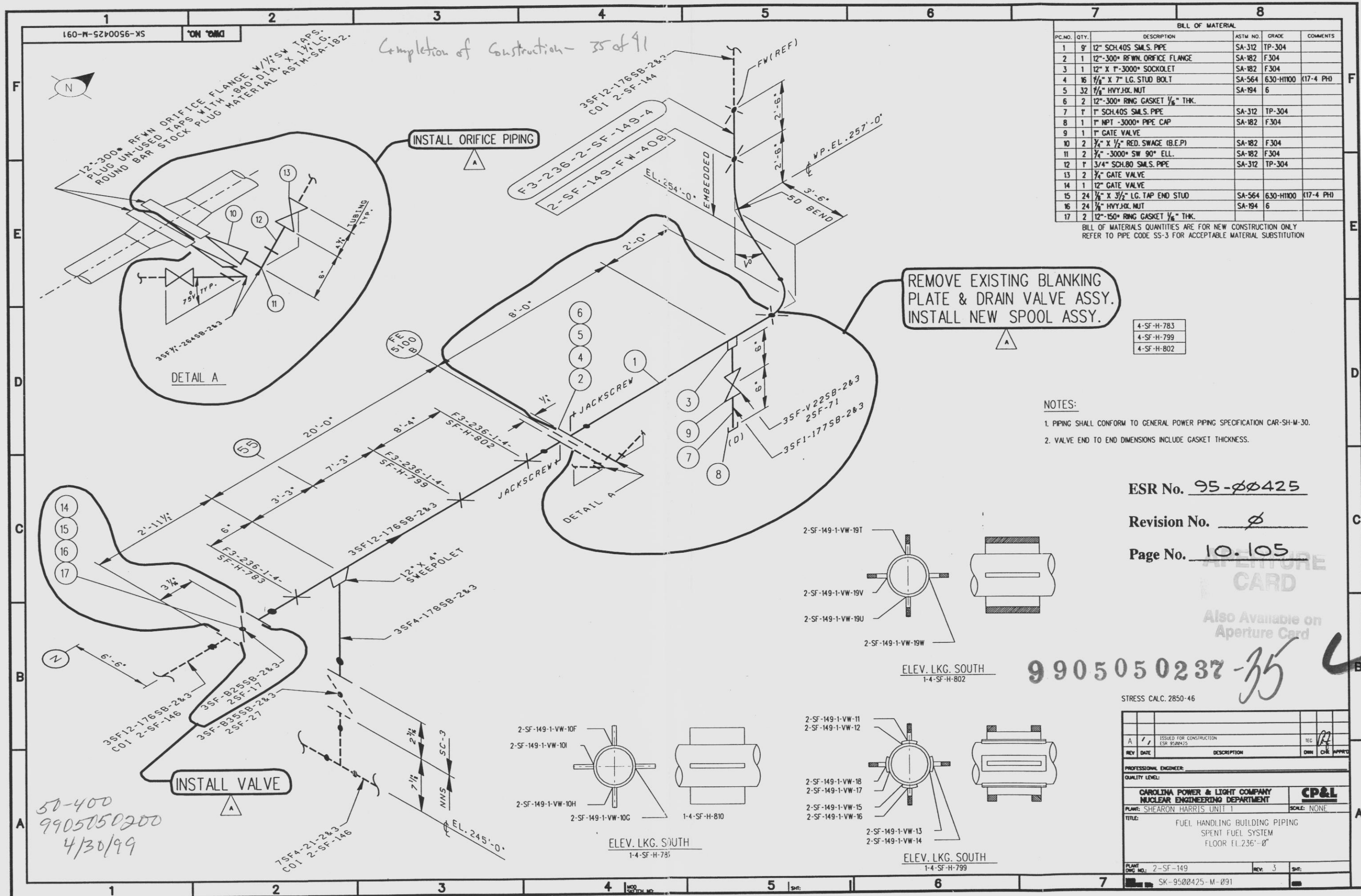
REMOVE EXISTING BLIND FLANGE.
INSTALL ORIFICE FLANGE & PIPING

DETAIL A

50-400
9905050200
4/30/99

FILE: H2SF148.DGN

c:\plt\h2sf148.dgn Dec. 23, 1998 10:51:23



Completion of Construction - 35 of 41

BILL OF MATERIAL

PC.NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE	COMMENTS
1	9'	12" SCH.40S SMLS. PIPE	SA-312	TP-304	
2	1	12"-300° RFWN. ORIFICE FLANGE	SA-182	F304	
3	1	12" X 1" 3000° SOCKOLET	SA-182	F304	
4	16	1/4" X 7" LG. STUD BOLT	SA-564	630-H1100	(17-4 PH)
5	32	1/4" HVY.HX. NUT	SA-194	6	
6	2	12"-300° RING GASKET 1/4" THK.			
7	1	1" SCH.40S SMLS. PIPE	SA-312	TP-304	
8	1	1" NPT -3000° PIPE CAP	SA-182	F304	
9	1	1" GATE VALVE			
10	2	1/2" X 1/2" RED. SWAGE (B.E.P.)	SA-182	F304	
11	2	1/2" -3000° SW 90° ELL.	SA-182	F304	
12	1	3/4" SCH.80 SMLS. PIPE	SA-312	TP-304	
13	2	1/2" GATE VALVE			
14	1	12" GATE VALVE			
15	24	1/4" X 3/4" LG. TAP END STUD	SA-564	630-H1100	(17-4 PH)
16	24	1/4" HVY.HX. NUT	SA-194	6	
17	2	12"-150° RING GASKET 1/4" THK.			

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY
REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION

REMOVE EXISTING BLANKING
PLATE & DRAIN VALVE ASSY.
INSTALL NEW SPOOL ASSY.

- 4-SF-H-783
- 4-SF-H-799
- 4-SF-H-802

NOTES:

1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
2. VALVE END TO END DIMENSIONS INCLUDE GASKET THICKNESS.

ESR No. 95-00425

Revision No. 0

Page No. 10.105

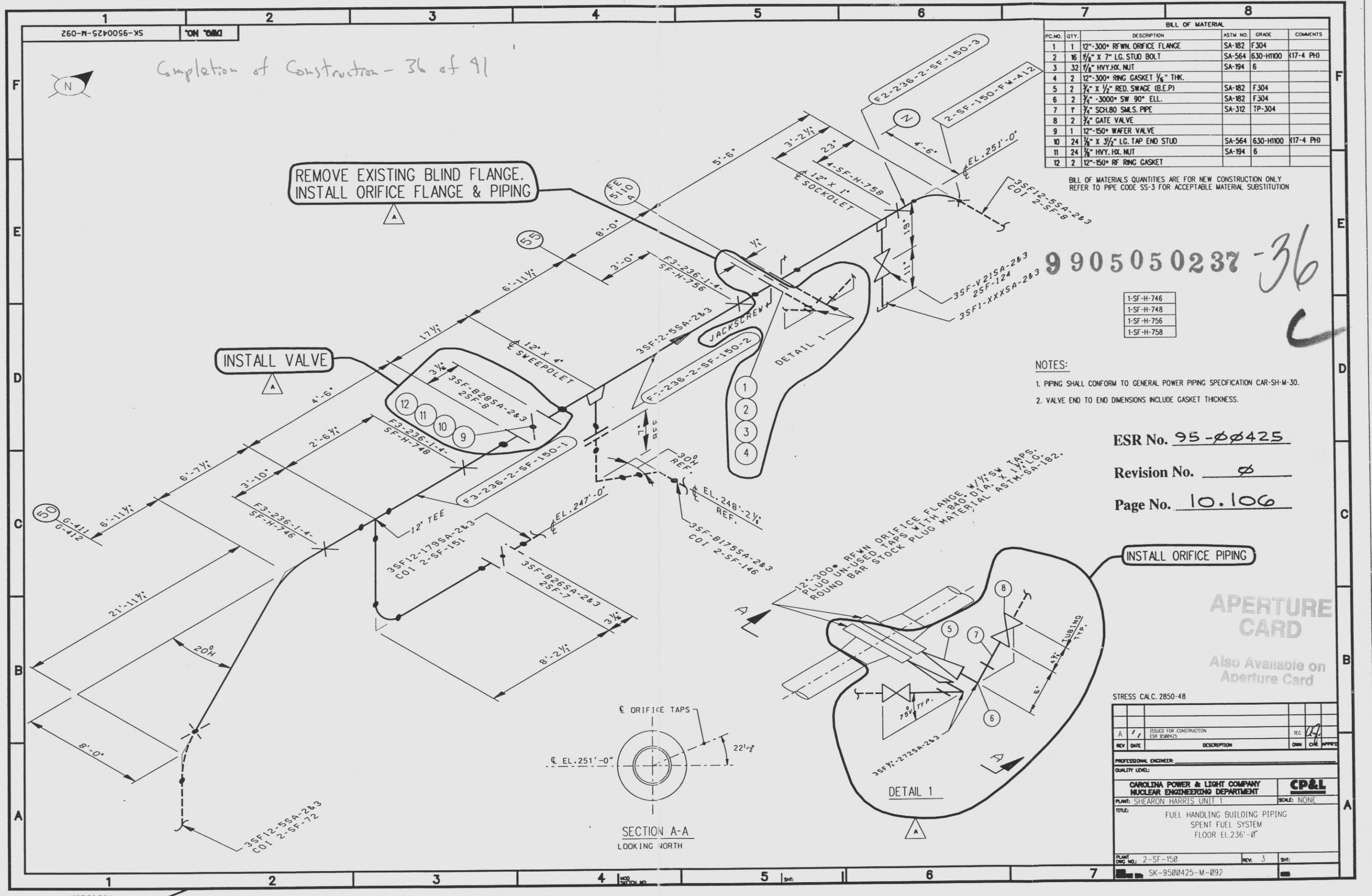
Also Available on
Aperture Card

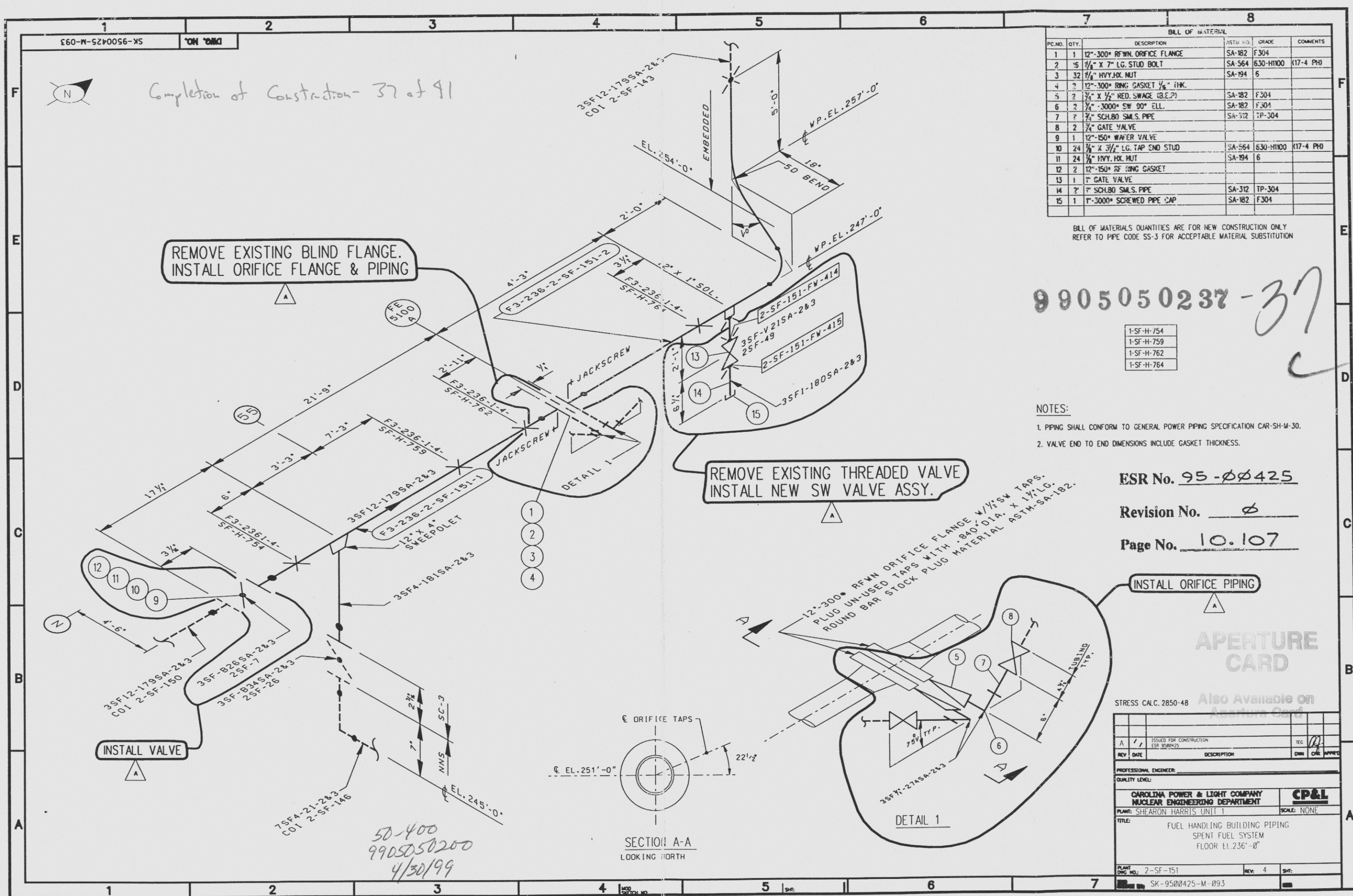
9905050237-35

STRESS CALC. 2850-46

ISSUED FOR CONSTRUCTION	TEC	12
REV. DATE	DESCRIPTION	CHK APPR
PROFESSIONAL ENGINEER:		
QUALITY LEVEL:		
CAROLINA POWER & LIGHT COMPANY NUCLEAR ENGINEERING DEPARTMENT		CP&L
PLANT: SHEARON HARRIS UNIT 1		SCALE: NONE
TITLE: FUEL HANDLING BUILDING PIPING SPENT FUEL SYSTEM FLOOR EL. 236'-0"		
PLANT DWG NO.: 2-SF-149	REV. 3	SHT.
SK-9500425-M-091		

50-400
9905050200
4/30/99





BILL OF MATERIAL				
PC.NO.	QTY.	DESCRIPTION	ASTM NO.	GRADE
1	1	12"-300" REWN. ORIFICE FLANGE	SA-182	F304
2	15	1/4" X 7" LG. STUD BOLT	SA-564	630-H100
3	32	1/4" HVY. HD. NUT	SA-194	6
4	2	12"-300" RING GASKET 1/4" THK.	SA-182	F304
5	2	3/4" X 1/2" RED. SWAGE (B.E.P.)	SA-182	F304
6	2	1/4" -3000" SW 90° ELL.	SA-182	F304
7	2	1/4" SCH.80 SMLS. PIPE	SA-312	TP-304
8	2	1/4" GATE VALVE		
9	1	12"-150" WAFER VALVE		
10	24	1/4" X 3/4" LG. TAP END STUD	SA-564	630-H100
11	24	1/4" HVY. HD. NUT	SA-194	6
12	2	12"-150" RF RING GASKET		
13	1	1" GATE VALVE		
14	2	1" SCH.80 SMLS. PIPE	SA-312	TP-304
15	1	1"-3000" SCREWED PIPE CAP	SA-182	F304

BILL OF MATERIALS QUANTITIES ARE FOR NEW CONSTRUCTION ONLY. REFER TO PIPE CODE SS-3 FOR ACCEPTABLE MATERIAL SUBSTITUTION.

9905050237-37

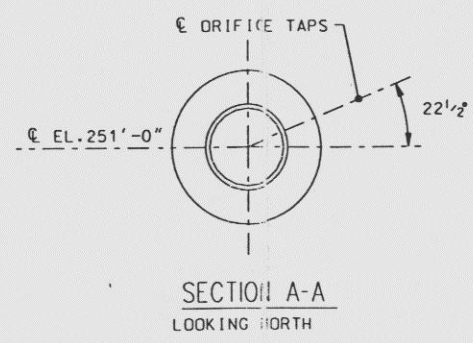
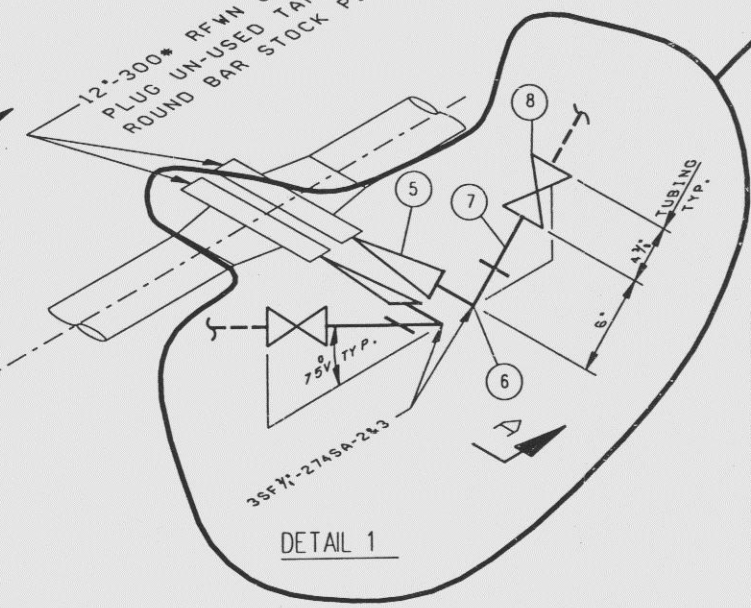
1-SF-H-754
1-SF-H-759
1-SF-H-762
1-SF-H-764

- NOTES:
- 1. PIPING SHALL CONFORM TO GENERAL POWER PIPING SPECIFICATION CAR-SH-M-30.
 - 2. VALVE END TO END DIMENSIONS INCLUDE GASKET THICKNESS.

ESR No. 95-00425

Revision No. 0

Page No. 10.107



STRESS CALC. 2850-48

Also Available on Aperture Card

REV	DATE	DESCRIPTION	CHK	APP
A	1/1	ISSUED FOR CONSTRUCTION		
REV	DATE	DESCRIPTION	CHK	APP

PROFESSIONAL ENGINEER:

QUALITY LEVEL:

CAROLINA POWER & LIGHT COMPANY
NUCLEAR ENGINEERING DEPARTMENT

PLANT: SHEARON HARRIS UNIT 1

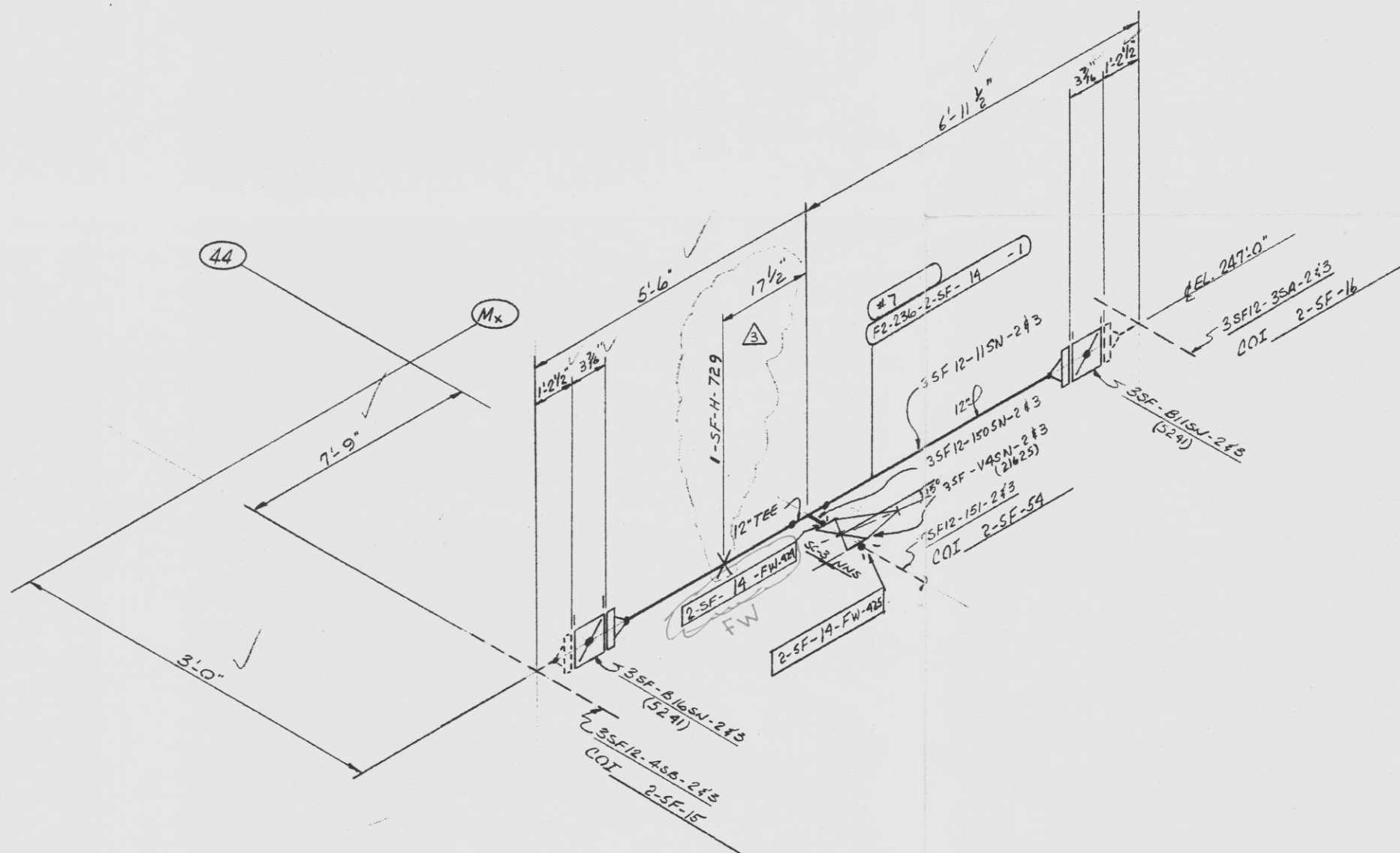
TITLE: FUEL HANDLING BUILDING PIPING
SPENT FUEL SYSTEM
FLOOR EL. 236'-0"

PLANT: 2-SF-151

REV: 4

SK-9500425-M-093





BEVELS PER <u>D-119</u>					
ITEM	SIZE	DET.	"C" DIM.	"T" M	"D" DIM
PIPE	12"	"E"	12.053	328"	.500"
FTG'S		S	(S	.250
PIPE					
FTG'S					.250

[illegible]

- ENTIRE ISO IN SCOPE

MATERIAL TO BE SOLUTION ANNEALED TO A TEMPERATURE ABOVE 1900°F
RAPID COOL BY WATER QUENCH TO LESS THAN 800°F.

[illegible]

SHEARON HARRIS NUCLEAR POWER PLANT
WAKE COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL JK. T2
CATEGORY 3 STNLS. ETL.
ASME SECTION III 1971 ED. V. TH
ADDENDA THRU SUMMER 1973
SHOP NOTES: D-194
PRINT: NONE
SURF. PREP. NONE

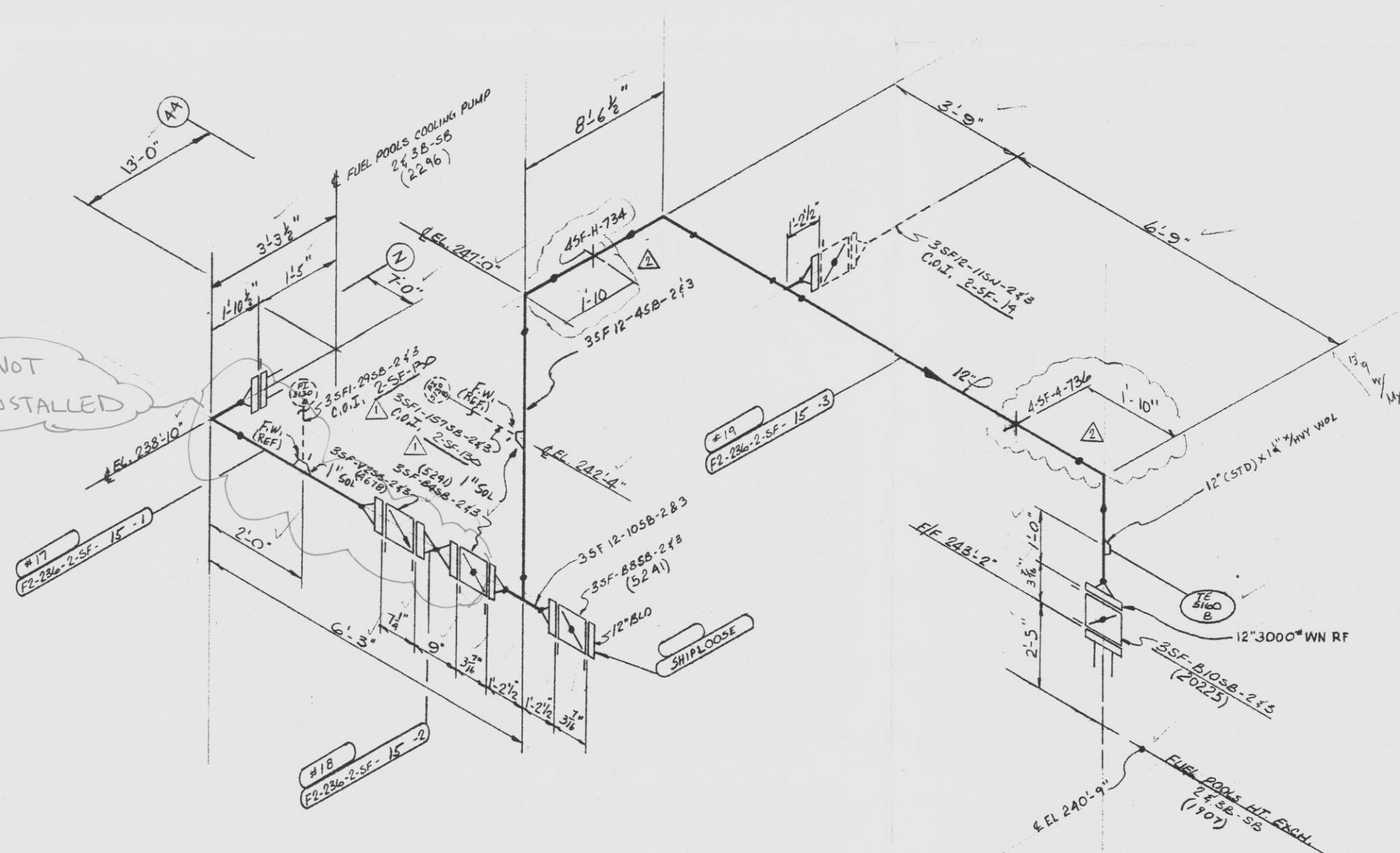
SOUTHWEST FABRICATING
& WELDING CO., INC. *AP*
HOUSTON, TEXAS

CUSTOMER CAROLINA POWER & LIGHT CO
CUST. P.O. NO. NY 435025
S.O. Q3304-FD ISO NO. P-SF-14

APERTURE CARD

Alternative Plan Scope - 3 of 28

9905050737-40



4-5F-H-734
-736

BEVELS PER D-219					
ITEM	SIZE	DET.	"C" DIM.	"T" M	"D" DIM.
PIPE	12"	"E"	12.063"	1328	500
FTG'S		5	5	5	250"
PIPE					
FTG'S					250"




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


ALL INSTALLED PIPING IN SCOPE


[illegible][illegible]

SPECIALTIES		
SWK#	DESCRIPTION	ACT#
48	78" Ø X 3 1/4" LG TAP END STD	
	W/10 NUT HA HD NUT EA	
12	12" 1/2" Ø W/10	
12	178" Ø X 3 1/4" LG TAP END STD	
	W/10 NUT HA HD NUT EA	
	12" 300" W/10	
12	78" Ø X 1 1/2" LG STD ROBT	
	(Ø) NVV HA HD NUTS EA	
	12" 300" W/10	
12	78" Ø X 3 1/4" LG STD ROBT	
	(Ø) NVV HA HD NUTS EA	
	12" 300" W/10	
1	12" 150" RF B-IND FLG	
2	12" 150" RF RING GSKT	
2	12" 300" RF RING GSKT	

[illegible]

10/9/84  HANGER REV. C
C. 135UE  

10/21/84  CALL TO R/FD, COE
HE ACCORDED L/C
LAST REPAIR DESCRIPTION  TV 


DATE REV.  S/C


CPBL - NPES
FIELD DRAWING NUMBER NO. _____

APPLICABLE DESIGN DOCUMENTS

AS OMNO 216.5 C 412 REV. 2


AS AUGMENTED BY _____

PREPARED BY _____ CHECKED BY TH 

SUPERVISOR _____ DATE 10/21/84 

NO. 10, 121, 82

* RELEASED FOR CONSTRUCTION *

11-27-78 CHRD TO 6-412  DWN BC

ISSUE FOR FILE

DATE REV. DESCRIPTION BY CH

DRAWN BY F 10-13-78

ERECTED BY F 1-10-78



APPROVED BY  3-4-80

PLATE SHL. CAR 216.5 C-412 216

SOUTHWEST FABRICATING
& WELDING CO., INC. 
HOUSTON, TEXAS

CUSTOMER CAROLINA POWER & LIGHT CO.

CUST. P.O. NO. NY 125035

NO. Q3300-EP ISO NO. 2-S-F-15

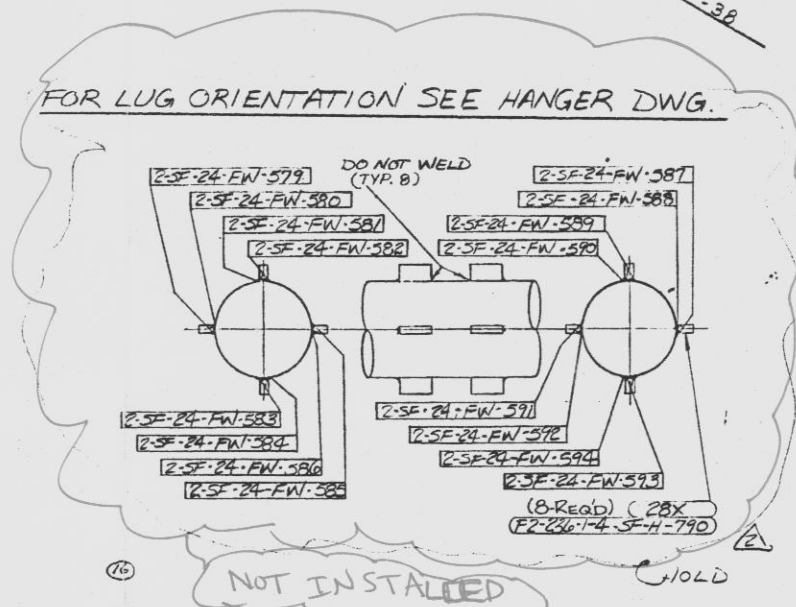
1075 2

Alternative Plan Scope - 4 of 28

9905050237-41

IF no Fw's, why in scope??

APERTURE CARD



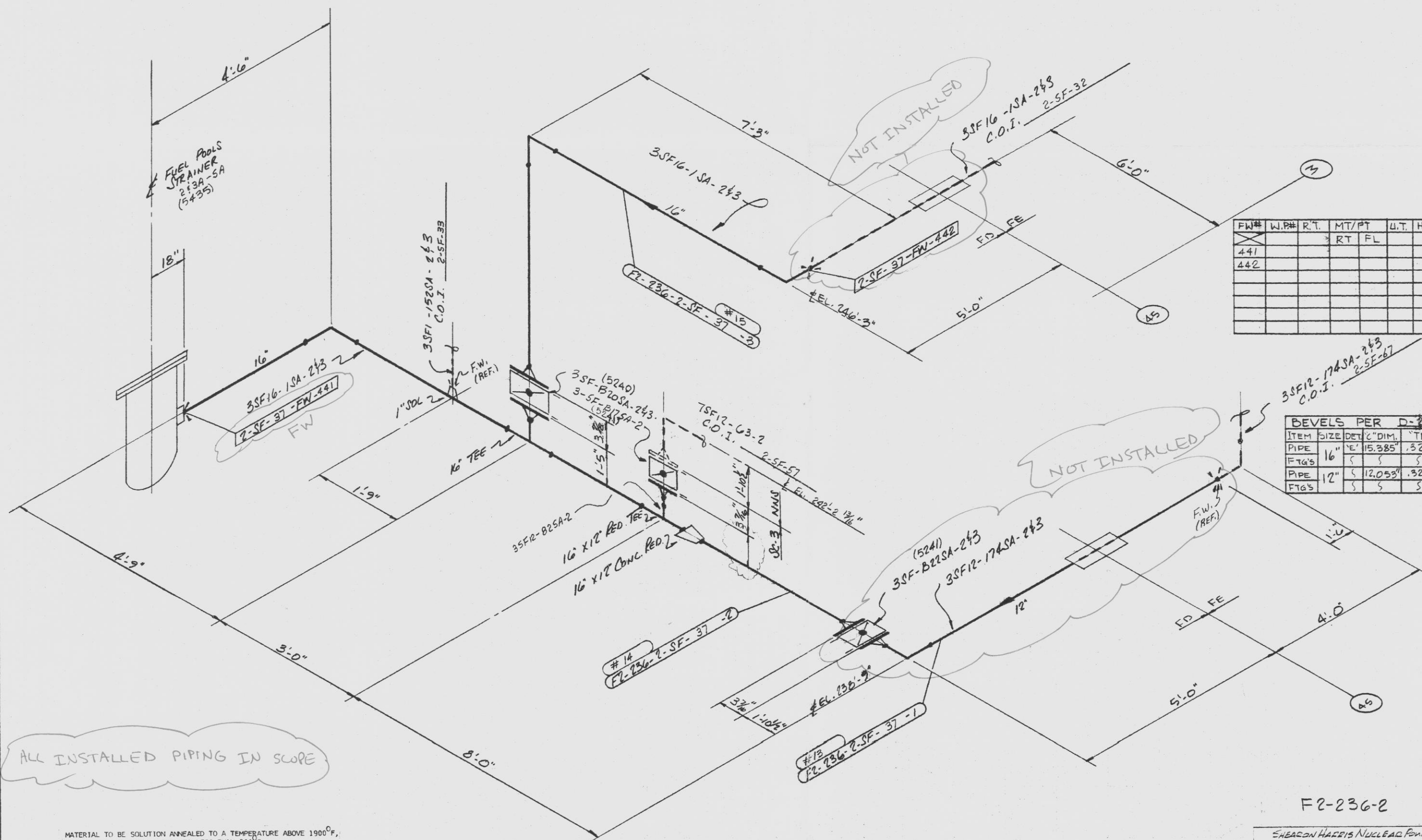
SHOP DETAIL LIST		
QUNT.	PART NO.	INT. NO.
1	FL-236-2-SF-24	-1 28
1	FL-236-1-4-SF-W-790	28X
-SNIP LOOSE- GASKETS		24-

[illegible]

SHEARON HARRIS NUCLEAR POWER PLANT
WAKE COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL UNIT 2
CATEGORY 3 SINCE 5%
ASME SECTION III 1971 ED. WITH
APPENDIX THERU SUMMER 1975
SHOP NOTES: D-194
PAINT: NONE
SURF. PREP: NONE

CERTIFICATE OF COMPLIANCE REQ'D			
		A193-67	A194-WH
MACH.	STUD.	BOLTS	NUTS
SETS		SPECIFICATION	
BOLTS & NUTS			

No FW's; Why in-scope



MATERIAL TO BE SOLUTION ANNEALED TO A TEMPERATURE ABOVE 1900°F,
RAPID COOL BY WATER QUENCH TO LESS THAN 800°F.

PIPE		FITTINGS		FLANGES		BOLTS & NUTS		GASKETS	
QTY	SIZE	QTY	SIZE	QTY	SIZE	QTY	SIZE	QTY	SIZE
15-3	1/2"	STD	SA 358-TP 304/316	150	RF	SA 182	3/4"	1	3/4"
			CLY WLD						
			(5% MIN FERRITE)						
55-3	1/2"	405	SA 312/316 TP 304/316 3MLS						
			OR SA 358 CLY WLD						
			TP 304/316						
			(5% MIN FERRITE)						
SPEC	SIZE	SCHED	ASTM SPECIFICATION	TOTAL	LRE	SRE	45°	TEE	STUB
PIPE									
FITTINGS									
FLANGES									
BOLTS & NUTS									
GASKETS									

CERT. OF COMP. RECD.

DATE: 11/29/79
REV: 0
CHECKED TO: 07418 N
ISSUED FOR: FAB.
BY: GHR
DRAWN BY: CH
DESCRIPTION: 11-4-79
CHECKED BY: 444
DATE: 11-17-79
APPROVED BY: 444
DATE: 4-3-80
FILED BY: NO
PLAN NO. NO: 002-1162-G-412 R13
CATEGORY 3
ASME SECTION III 1971 ED. WITH
APPENDIX THER SUMMER 1973
SHOP NOTES: D-194
PAINT: NONE
SURF PREP: NONE

SOUTHWEST FABRICATING
& WELDING CO., INC.
HOUSTON, TEXAS
CUSTOMER: INDIANA POWER PLANT CO.
CUST. P.O. NO: NY-438035
S.O. 002-1162-FD ISO NO: 2-SF-32

SPECIALTIES	
QTY	DESCRIPTION
32	1" X 1/4" X 1/4" TAP END STUD
	W/11 HVT HX HO NUT EA.
	(16" 150#)
40	1/2" X 3/4" X 3/4" TAP END STUD
	W/10 HVT HX HO NUT EA.
	(12" 150#)
2	1/2" 150# RF RING GSKT.
4	1/2" 150# RF RING GSKT.

SHOP DETAIL LIST	
QTY	DESCRIPTION
1	FL-236-2-SF-37
1	FL-236-2-SF-37
1	FL-236-2-SF-37

FW#	W.P#	R.T.	MT/PT	U.T.	HYDRO
441			RT	FL	
442					

BEVELS PER D-210				
ITEM	SIZE	DET	C" DIM.	"TH" D" DIM.
PIPE	16"		15.385"	.500"
FTGS				.250"
PIPE	12"		12.053"	.500"
FTGS				.250"

11/29/79
DATE: 11/29/79
REV: 0
CHECKED TO: 07418 N
ISSUED FOR: FAB.
BY: GHR
DRAWN BY: CH
DESCRIPTION: 11-4-79
CHECKED BY: 444
DATE: 11-17-79
APPROVED BY: 444
DATE: 4-3-80
FILED BY: NO
PLAN NO. NO: 002-1162-G-412 R13
CATEGORY 3
ASME SECTION III 1971 ED. WITH
APPENDIX THER SUMMER 1973
SHOP NOTES: D-194
PAINT: NONE
SURF PREP: NONE

Alternative Plan Scope - 12 of 28

9905050237-49

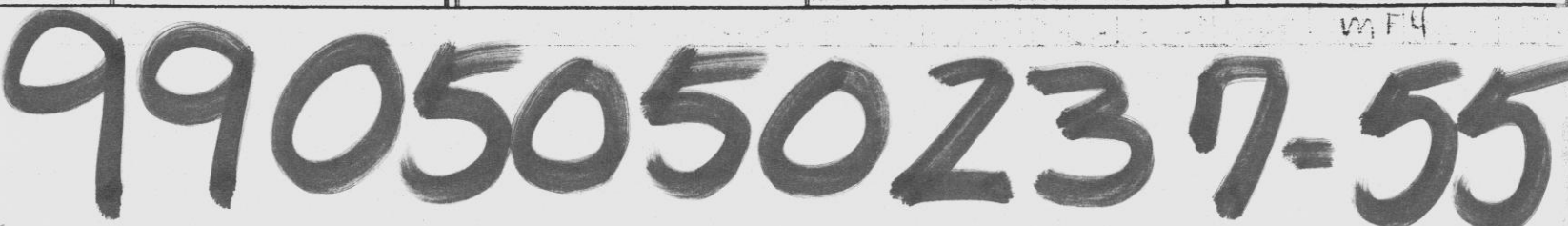
APERTURE
CARD



C

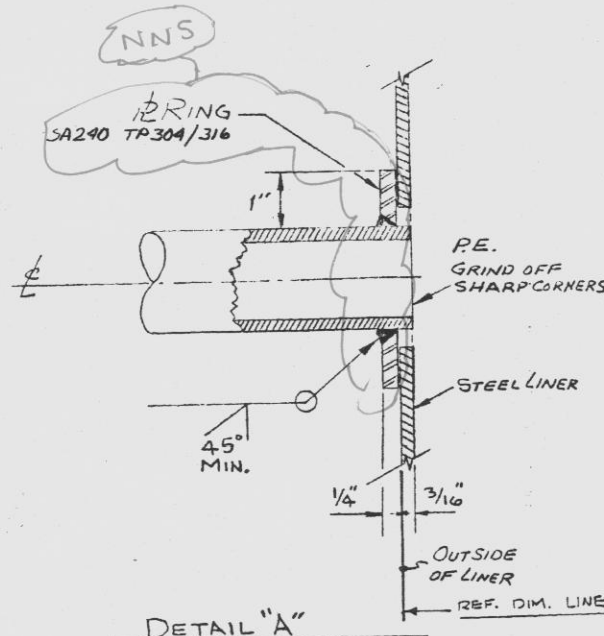
APERTURE CARD

APERTURE



APERTURE CARD

- Just the ⁶⁰⁻³¹⁰ hole is missing? YES
- FSR ISO shows 60-311, not associated w/ barrel.

[illegible][illegible]

9/12/91 95	ADD 150 CONT # RE-ISSUE FOR FAB	RC	107
1-4-80	CHK'D FOR 1/5 ISSUE FOR FAB	NA	RH
DATE	REV.	DESCRIPTION	BY
DRAWN BY			12/18/79
CHECKED BY			12-13-79
APPROVED BY			7-12-80
FLAW INT. NO.	0-2-80		
FLAW COR. NO.	CAR-2165-G-413 R/5		

CATEGORY 3 STNLS. STL.
ASME SECTION III 1971 ED. WITH
ADDENDA THRU SUMMER 1973
SHOP NOTES: D-194
PAINT: NONE
SURF PREP: NONE

SOUTHWEST FABRICATING
& WELDING CO., INC. (11)
HOUSTON, TEXAS

CUSTOMER CAROLINA POWER & LIGHT CO.

CUST. P. O. NO. NY-435035

S.O. Q3304-FH ISO NO. 2-SF-143

PAINT: NONE

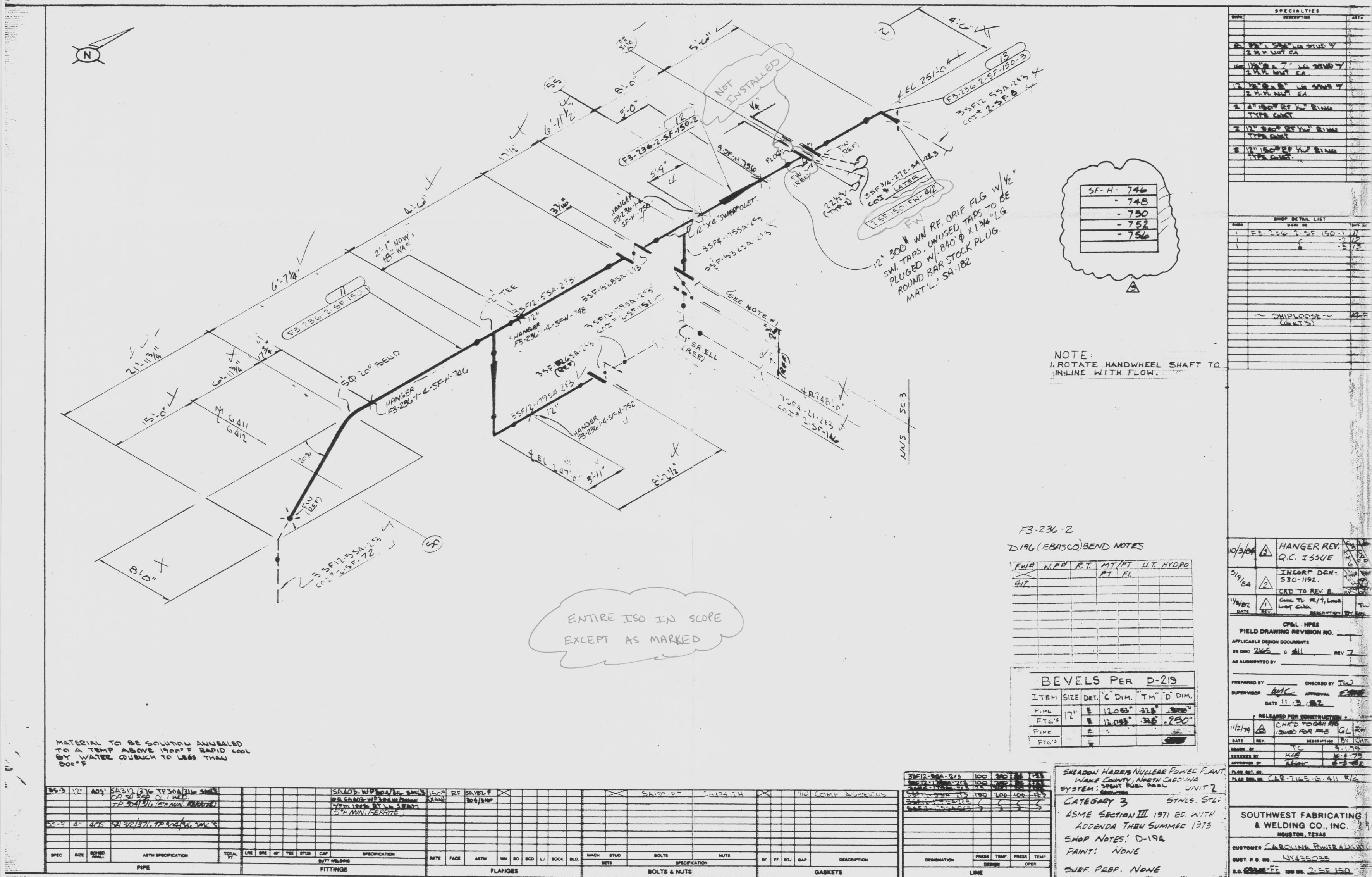
SURF PREP: NONE

WIFI GT 10-1-80

APERTURE
CARD

Alternative Plan Scope - 20 of 28

9905050237-57 Verify plates NMS



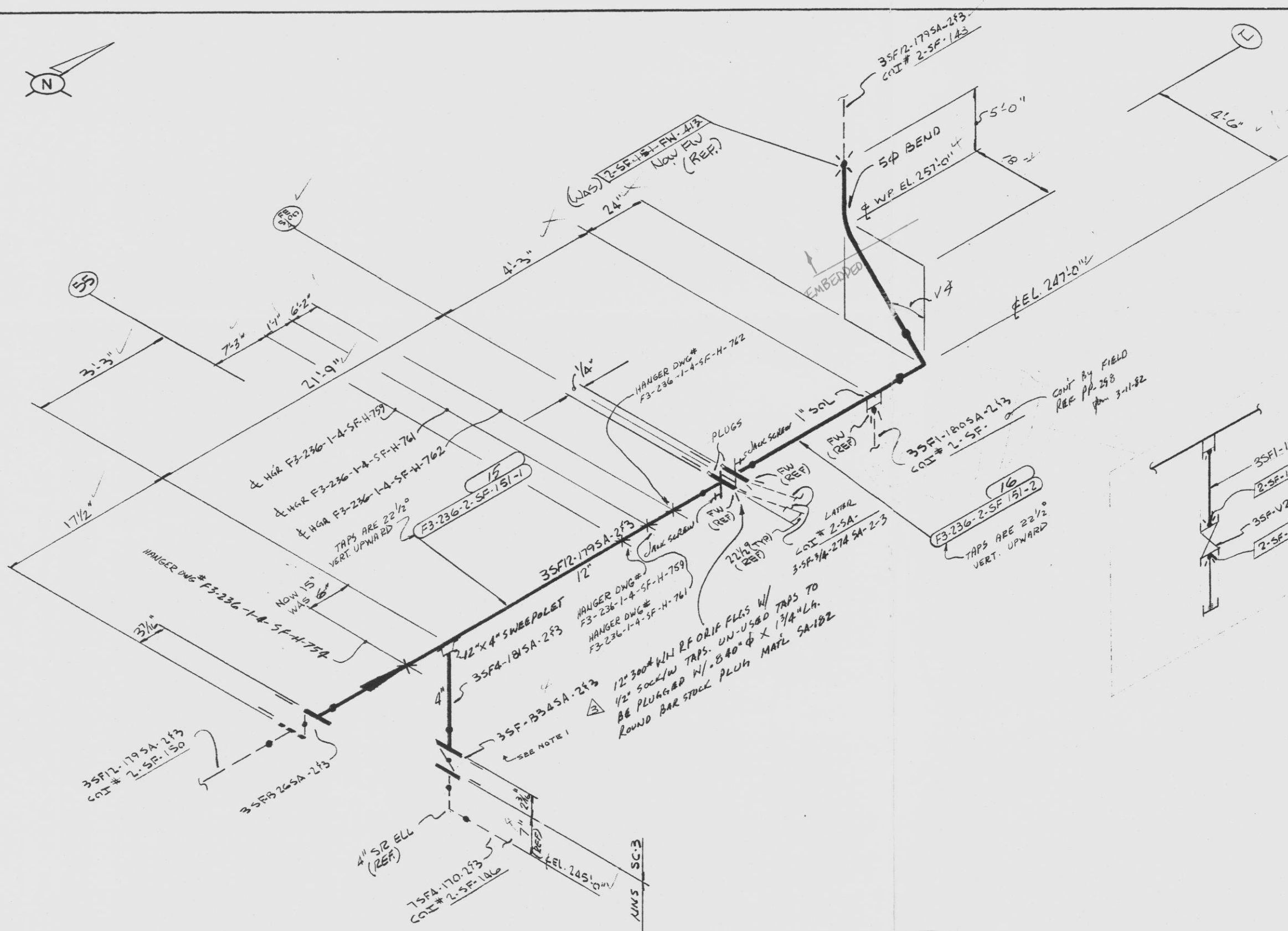
Alternative Plan scope - 24 of 28

9905050237-61

50-400
9905050200
4/30/99

APERTURE
CARD

C



MAT'L TO BE SOLUTION ANNEALED TO A TEMP ABOVE 1900°F RAPID COOL BY WATER QUENCH TO LESS THAN 800°F

55-2	17"	A05	SA 312/316 TP 304/316 SMLS OR SA 320 CL 1 WED TP 304/316 (5/8 MIN PERMITS)								SA 403-WP 304/316 SMLS OR SA 403-WP 304W/316W W/TA 100% ST W/ 50AM (5/8 MIN PERMITS)	150# RF	SA 192-F (KAL)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																</
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DESIGNATION	PRESS	TEMP	PRESS	TEMP
	DESIGN	OPER.		

SEABOARD HARRIS NUCLEAR POWER PLANT
HARRIS COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL POOL UNIT 2
CATEGORY: 3
ASME SECTION III 1971 ED. WITH
ADDENDA THRU SUMMER 1973
SHOP NOTES: D-194
PAINT: NONE
SURF PREP: NONE

1-SF-H-754
-759
-761
-762

NOTE:
1. ROTATE HANDWHEEL SHAFT TO BE IN-LINE WITH FLOW.

D-196 EBASCO BEND NOTES

ITEM	SIZE	DET.	C DIM.	T M	D DIM.
PIPE	12"	E	12.053"	1.318"	1.500"
FTG'S			12.053"	1.318"	1.250"

FW#	W.P.#	R.T.	MT/PT	U.T.	HYDRO
413			RT	FL	
414					
415					

SPECIALTIES	DESCRIPTION	ASTM
2	3/4" x 5/8" LG STUD W 2 H.H. NUTS EA	
16	1/8" x 7" LG STUD W 2 H.H. NUTS EA	
12	1/8" x 8" LG STUD W 2 H.H. NUTS EA	
2	4" 150# RF 1/2" RING TYPE GASKET	
2	12" 150# RF 1/2" RING TYPE GASKET	
2	12" 300# RF 1/2" RING TYPE GASKET	

SHOP DETAIL LIST	MARK NO.	SHT NO.
1	ES-236-2-SF-151-1	16
	ES-236-2-SF-151-2	16

10/3/84	3	HANGER REV Q.C. ISSUE	
5/19/84	3	INCORP DCN-530-1192 CHECKED TO REV. B	
11/3/82	1	CHK TO R/T, LINE LIST	

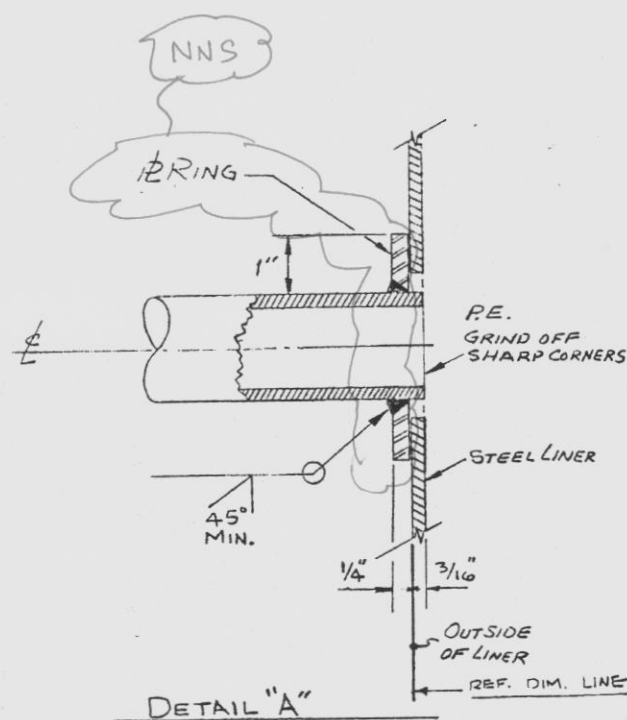
SOUTHWEST FABRICATING & WELDING CO., INC.
HOUSTON, TEXAS
CUSTOMER: CAROLINA POWERLIGHT CO.
CUST. P.O. NO: NY435035
S.O. 23304EE ISO NO: 2-SF-151

Alternative Plan Scope - 25 of 28

9905050237-62

50-400
9905050280
4/30/99

APERTURE CARD



BEVELS PER D-219					
ITEM	SIZE	DET.	"C" DIM.	"T" M	D DIM.
PIPE	12"	E	12.053	.328	.500
FT6'S					

F3-261-2

[illegible]

Q2V # 5
SHEARON HARRIS NUCLEAR POWER PLANT
WAKE COUNTY, NORTH CAROLINA
SYSTEM: SPENT FUEL UNIT #2
CATEGORY 3 STALS. STL.
ASME SECTION III 1971 ED. WITH
ADDENDA THRU SUMMER 1973
SNOW NOTES: D-194
PAINT: NONE
SURF. PEEL: NONE

**SOUTHWEST FABRICATING
& WELDING CO., INC.** (1)
HOUSTON, TEXAS

CUSTOMER CAROLINA POWER & LIGHT Co.

CUST. P. O. NO. NY-435035

S.O. Q3304-FH SO NO. 2-SF-159

3SF12-17/50-24	150	200	36	123
3SF12-17/50-243	+	+	+	+
DESIGNATION	PRESS	TEMP.	PRESS	TEMP.
	DESIGN		OPER.	
LINE				

Alternative Plan Scope - 26 of 28

50-400
9905050200
4/30/99

APERTURE CARD

why is $R \times H^5$?

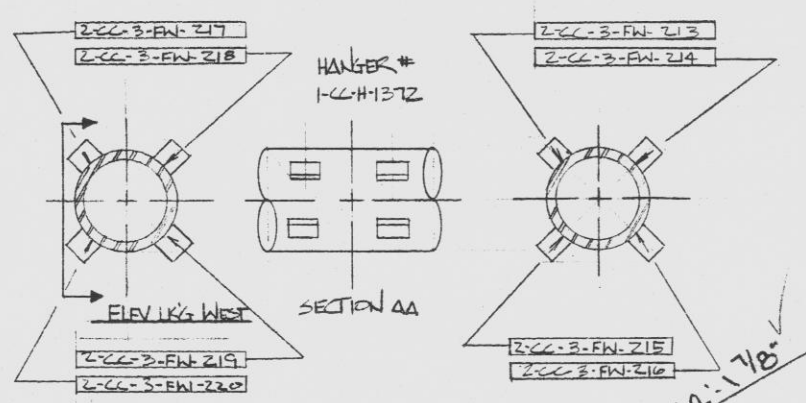


1-CC-H-137
1-1372
1-1376

FW @ VALVES ONLY BEVELS PER D-219					
ITEM	SIZE	DET.	C. DIM.	T.M.	D. DIM.
PIPE	14"	E	13.303"	328"	500"
FTG'S	14"	E	13.303"	328"	250"
PIPE	14"	E	13.303"	328"	250"

FW	MP	RT	MT	UT	HYDRO
206					
207					
208					
209					
210					
211					
212					

SHOP DETAIL LIST		
ITEM	DESCRIPTION	QTY
1	F2-236-2-CC-3-1	4
2	F2-236-2-CC-3-2	6
3	F2-236-2-CC-3-3	6
4	F2-236-2-CC-3-4	6
5	F2-236-2-CC-3-5	4



SHEATH HARRIS NUCLEAR POWER PLANT WAKE COUNTY NORTH CAROLINA SYSTEMS CONTROL UNIT									
ITEM	QTY	UNIT	DESCRIPTION	DATE	BY	CHKD	APP'D	REV	REMARKS
1	4		F2-236-2-CC-3-1	11-3-78	FW	FW	FW	1	
2	6		F2-236-2-CC-3-2	11-3-78	FW	FW	FW	2	
3	6		F2-236-2-CC-3-3	11-3-78	FW	FW	FW	3	
4	6		F2-236-2-CC-3-4	11-3-78	FW	FW	FW	4	
5	4		F2-236-2-CC-3-5	11-3-78	FW	FW	FW	5	

SHEATH HARRIS NUCLEAR POWER PLANT
WAKE COUNTY NORTH CAROLINA
SYSTEMS CONTROL UNIT
CATEGORY 3 CARB-STL
ASME SECT III 1971 ED. WITH
ADDENDA THRU SUMMER 1978
SHOP NOTES: D-306
PRINT: (INORGANIC) CARBON LINE 11
PER APPROV PROC. EP190582
SUNK PREP: CONN. BLAST TOSSRC. 5.0

11/3/78	FW	FW	FW	FW	FW
DATE	REV	DESCRIPTION	BY	CHKD	APP'D
11/3/78	1	ISSUED FOR FAB	FW	FW	FW
11/3/78	2	ISSUED FOR FAB	FW	FW	FW
11/3/78	3	ISSUED FOR FAB	FW	FW	FW
11/3/78	4	ISSUED FOR FAB	FW	FW	FW
11/3/78	5	ISSUED FOR FAB	FW	FW	FW
11/3/78	6	ISSUED FOR FAB	FW	FW	FW
11/3/78	7	ISSUED FOR FAB	FW	FW	FW
11/3/78	8	ISSUED FOR FAB	FW	FW	FW
11/3/78	9	ISSUED FOR FAB	FW	FW	FW
11/3/78	10	ISSUED FOR FAB	FW	FW	FW
11/3/78	11	ISSUED FOR FAB	FW	FW	FW
11/3/78	12	ISSUED FOR FAB	FW	FW	FW
11/3/78	13	ISSUED FOR FAB	FW	FW	FW
11/3/78	14	ISSUED FOR FAB	FW	FW	FW
11/3/78	15	ISSUED FOR FAB	FW	FW	FW
11/3/78	16	ISSUED FOR FAB	FW	FW	FW
11/3/78	17	ISSUED FOR FAB	FW	FW	FW
11/3/78	18	ISSUED FOR FAB	FW	FW	FW
11/3/78	19	ISSUED FOR FAB	FW	FW	FW
11/3/78	20	ISSUED FOR FAB	FW	FW	FW
11/3/78	21	ISSUED FOR FAB	FW	FW	FW
11/3/78	22	ISSUED FOR FAB	FW	FW	FW
11/3/78	23	ISSUED FOR FAB	FW	FW	FW
11/3/78	24	ISSUED FOR FAB	FW	FW	FW
11/3/78	25	ISSUED FOR FAB	FW	FW	FW
11/3/78	26	ISSUED FOR FAB	FW	FW	FW
11/3/78	27	ISSUED FOR FAB	FW	FW	FW
11/3/78	28	ISSUED FOR FAB	FW	FW	FW
11/3/78	29	ISSUED FOR FAB	FW	FW	FW
11/3/78	30	ISSUED FOR FAB	FW	FW	FW
11/3/78	31	ISSUED FOR FAB	FW	FW	FW
11/3/78	32	ISSUED FOR FAB	FW	FW	FW
11/3/78	33	ISSUED FOR FAB	FW	FW	FW
11/3/78	34	ISSUED FOR FAB	FW	FW	FW
11/3/78	35	ISSUED FOR FAB	FW	FW	FW
11/3/78	36	ISSUED FOR FAB	FW	FW	FW
11/3/78	37	ISSUED FOR FAB	FW	FW	FW
11/3/78	38	ISSUED FOR FAB	FW	FW	FW
11/3/78	39	ISSUED FOR FAB	FW	FW	FW
11/3/78	40	ISSUED FOR FAB	FW	FW	FW
11/3/78	41	ISSUED FOR FAB	FW	FW	FW
11/3/78	42	ISSUED FOR FAB	FW	FW	FW
11/3/78	43	ISSUED FOR FAB	FW	FW	FW
11/3/78	44	ISSUED FOR FAB	FW	FW	FW
11/3/78	45	ISSUED FOR FAB	FW	FW	FW
11/3/78	46	ISSUED FOR FAB	FW	FW	FW
11/3/78	47	ISSUED FOR FAB	FW	FW	FW
11/3/78	48	ISSUED FOR FAB	FW	FW	FW
11/3/78	49	ISSUED FOR FAB	FW	FW	FW
11/3/78	50	ISSUED FOR FAB	FW	FW	FW
11/3/78	51	ISSUED FOR FAB	FW	FW	FW
11/3/78	52	ISSUED FOR FAB	FW	FW	FW
11/3/78	53	ISSUED FOR FAB	FW	FW	FW
11/3/78	54	ISSUED FOR FAB	FW	FW	FW
11/3/78	55	ISSUED FOR FAB	FW	FW	FW
11/3/78	56	ISSUED FOR FAB	FW	FW	FW
11/3/78	57	ISSUED FOR FAB	FW	FW	FW
11/3/78	58	ISSUED FOR FAB	FW	FW	FW
11/3/78	59	ISSUED FOR FAB	FW	FW	FW
11/3/78	60	ISSUED FOR FAB	FW	FW	FW
11/3/78	61	ISSUED FOR FAB	FW	FW	FW
11/3/78	62	ISSUED FOR FAB	FW	FW	FW
11/3/78	63	ISSUED FOR FAB	FW	FW	FW
11/3/78	64	ISSUED FOR FAB	FW	FW	FW
11/3/78	65	ISSUED FOR FAB	FW	FW	FW
11/3/78	66	ISSUED FOR FAB	FW	FW	FW
11/3/78	67	ISSUED FOR FAB	FW	FW	FW
11/3/78	68	ISSUED FOR FAB	FW	FW	FW
11/3/78	69	ISSUED FOR FAB	FW	FW	FW
11/3/78	70	ISSUED FOR FAB	FW	FW	FW
11/3/78	71	ISSUED FOR FAB	FW	FW	FW
11/3/78	72	ISSUED FOR FAB	FW	FW	FW
11/3/78	73	ISSUED FOR FAB	FW	FW	FW
11/3/78	74	ISSUED FOR FAB	FW	FW	FW
11/3/78	75	ISSUED FOR FAB	FW	FW	FW
11/3/78	76	ISSUED FOR FAB	FW	FW	FW
11/3/78	77	ISSUED FOR FAB	FW	FW	FW
11/3/78	78	ISSUED FOR FAB	FW	FW	FW
11/3/78	79	ISSUED FOR FAB	FW	FW	FW
11/3/78	80	ISSUED FOR FAB	FW	FW	FW
11/3/78	81	ISSUED FOR FAB	FW	FW	FW
11/3/78	82	ISSUED FOR FAB	FW	FW	FW
11/3/78	83	ISSUED FOR FAB	FW	FW	FW
11/3/78	84	ISSUED FOR FAB	FW	FW	FW
11/3/78	85	ISSUED FOR FAB	FW	FW	FW
11/3/78	86	ISSUED FOR FAB	FW	FW	FW
11/3/78	87	ISSUED FOR FAB	FW	FW	FW
11/3/78	88	ISSUED FOR FAB	FW	FW	FW
11/3/78	89	ISSUED FOR FAB	FW	FW	FW
11/3/78	90	ISSUED FOR FAB	FW	FW	FW
11/3/78	91	ISSUED FOR FAB	FW	FW	FW
11/3/78	92	ISSUED FOR FAB	FW	FW	FW
11/3/78	93	ISSUED FOR FAB	FW	FW	FW
11/3/78	94	ISSUED FOR FAB	FW	FW	FW
11/3/78	95	ISSUED FOR FAB	FW	FW	FW
11/3/78	96	ISSUED FOR FAB	FW	FW	FW
11/3/78	97	ISSUED FOR FAB	FW	FW	FW
11/3/78	98	ISSUED FOR FAB	FW	FW	FW
11/3/78	99	ISSUED FOR FAB	FW	FW	FW
11/3/78	100	ISSUED FOR FAB	FW	FW	FW

9905050237-64

Alternative Plan Scope - 27 of 28

APERTURE CARD

50-400
9905050200
4/30/99

Explain OOS (will be out of station)

