

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

November 19, 1999

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 99-495A
NL&OS/GDM R0'
Docket Nos. 50-280, 281
License Nos. DPR-32, 37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNITS 1 AND 2
ASME SECTION XI RELIEF REQUEST
NOTICE OF CHANGE TO TEMPORARY REPAIR AND
EXTENDED USE OF A TEMPORARY NON-CODE PIPE REPAIR

In a letter dated October 22, 1999 (Serial No. 99-495), Virginia Electric and Power Company requested NRC approval of a relief request associated with a temporary non-Code repair of an ASME Class 3 pipe as required by Generic Letter (GL) 90-05. Specifically, a through wall leak was discovered on a 30 inch component cooling heat exchanger (CCHX) discharge pipe associated with the service water system common to Surry Units 1 and 2. Performing a permanent Code weld repair was considered impractical because: 1) the affected piping cannot be isolated from the common service water discharge header, 2) the Unit 1 service water discharge tunnel has to be de-watered to effect a Code repair, 3) a plant modification is required to install a temporary service water discharge jumper, and 4) Unit 1 would have to be shut down resulting in an unnecessary plant transient.

In that letter, we also noted our intention to submit a subsequent relief request to permit the continued use of a temporary non-Code repair for the subject CCHX SW discharge line until the Surry Unit 1 Fall 2001 refueling outage (i.e., one operating cycle past the next scheduled Unit 1 refueling outage in Spring 2000.) Although this extension exceeds the time requirements specified in GL 90-05, the extension is considered necessary and justified for the following reasons:

- Significant planning and preparation is required to implement the permanent Code repair of the SW line, as the Unit 1 discharge tunnel must be de-watered and a temporary SW pipe jumper must be installed from the CCHXs' SW discharge lines to the Unit 2 discharge tunnel to effect the repair. As part of the ongoing station SW system inspection and repair plan, which has been underway for several years, de-watering of the Unit 1 SW discharge tunnel and the installation of a temporary SW jumper is being planned for the Fall 2001

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Unit 1 refueling outage. Therefore, performing the permanent Code pipe repair during the Fall 2001 outage is more reasonable as it would preclude the need to install the temporary SW jumper for two successive Unit 1 outages.

- Installing the temporary SW jumper to effect the SW pipe repair may require a license amendment due to a potential unreviewed safety question based on the SW jumper being an above-ground, non-missile protected line. If it is determined that a license amendment is required, preparation and transmittal, as well as NRC review and approval, of a license amendment request will require adequate time to accomplish.

To provide assurance that the temporary non-Code pipe repair will remain adequate throughout the one additional operating cycle, we will install a more substantial temporary non-Code repair. Details of the repair are provided in the attached relief request. Therefore, in accordance with the provisions of Generic Letter 90-05 and 10 CFR 50.55a(g)(6)(i), a relief request from the requirements of ASME Section XI is attached for your review and approval to permit the following: 1) the use of the more substantial temporary non-Code repair as the temporary non-Code repair for the balance of this cycle and 2) an extension to permit the use of the more substantial temporary non-Code repair beyond the time frame permitted by GL 90-05 until the Unit 1 Fall 2001 refueling outage.

The attached relief request for Surry Units 1 and 2 has been reviewed and approved by the Station Nuclear Safety and Operating Committee.

If you have any additional questions concerning this request, please contact us.

Very truly yours,



Leslie N. Hartz
Vice President - Nuclear Engineering and Services

Attachment

Commitments contained in this letter:

1. Periodic inspections to confirm structural integrity and leak tightness of the more substantial temporary non-Code repair will be performed as follows: 1) weekly visual VT-2 inspections for leakage and 2) quarterly VT-1 weld and VT-3 structural inspections.

cc: U. S. Nuclear Regulatory Commission
Region II
Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, Georgia 30303

Mr. R. A. Musser
NRC Senior Resident Inspector
Surry Power Station

Mr. R. Smith
Authorized Nuclear Inspector
Surry Power Station

Surry Power Station Units 1 and 2
Third Ten Year Interval

Notice of Change to Temporary Repair and
Request for Extended Use of Temporary Repair on "D" Component Cooling Heat
Exchanger Service Water Discharge Piping

1.0 Component Identification

System: Service Water
Class: ASME Class 3
Drawing: 11448-FM-071A Sh. 4
Component: 30"-WS-41-10

2.0 Impractical Code Requirements

IWA-4000 and IWD-4000 of ASME Section XI, 1989 Edition, require a weld repair to correct through wall leakage.

3.0 Background

A through wall leak exists on the moderate energy service water (SW) system downstream of the "D" CCHX (1-CC-E-1D) discharge isolation valve 1-SW-27. (See attached drawing 11448-FP-203D.) The flaw was evaluated by the "through wall" flaw method and determined to be within Generic Letter 90-05 guidelines. Virginia Electric and Power Company (Virginia Power) previously submitted a relief request dated October 20, 1999 (Serial No. 99-495) that requested the use of a temporary non-Code repair in accordance with Generic Letter 90-05. A temporary patch comprised of rubber gasket material and a 1/8 inch thick steel backing plate was placed over the hole and is held in place with stainless steel bands.

Further relief is requested herein to permit the following:

- Allow the use of a more substantial temporary non-Code repair as discussed below to meet Generic Letter 90-05 requirements and to take the place of the present temporary non-Code repair detailed in our previous relief request, and
- Permit the use of the more substantial temporary non-Code repair to extend beyond the time frame permitted by GL 90-05 until the Unit 1 Fall 2001 refueling outage.

4.0 Basis For Relief

The through wall flaw is located on piping connected to the discharge header of Surry's four Component Cooling Heat Exchangers (CCHXs) common to both units. No means of isolation, such as valves or flange locations, exist between the flaw location and the common SW header nor does the pipe configuration allow the option of utilizing a freeze plug for isolation. A code repair will require a Unit 1 shutdown and installation of a temporary jumper to divert the discharge of two CCHXs (required for one unit operation) to the Unit 2 discharge tunnel, allowing Unit 2 to remain in operation.

Furthermore, a license amendment may be required for the use of a temporary CCHX service water discharge jumper. In a submittal dated June 19, 1998 (Serial No. 98-327), we provided a basis for a similar jumper arrangement on the supply side of the Component Cooling Heat Exchangers to facilitate service water piping maintenance activities (e.g., internal pipe coating, inspection and repair). Use of this temporary jumper was restricted to a specific duration and number of times placed in service (Amendment Nos. 216/216 to the Surry Technical Specifications). The required jumper for the CCHX service water discharge will likely be a similar, non-missile protected pipe. In an effort to minimize the amount of time that the temporary jumper arrangement is required, as well as the number of times that it is placed in service, we are currently planning the service water maintenance activities that require de-watering the discharge tunnel to be performed concurrently with the SW discharge pipe Code repair during the Unit 1 Spring 2001 refueling outage.

A Code repair not only requires Unit 1 to be shutdown but also requires extensive planning and qualification of a temporary jumper arrangement to allow continued Unit 2 operation.

5.0 Alternate Requirements

A more substantial non-Code repair has been designed and evaluated and will be installed before the Unit 1 Spring 2000 outage. This repair will provide a 1/2 inch thick, ASTM A36 steel cylindrical enclosure from the concrete floor to the flange above the flaw. The top of the cylinder will be welded to the rim of the flange and the bottom of the cylinder will be welded to a 1" thick steel plate that is anchored to the floor with sixteen 1/2 inch diameter bolts. The existing soft patch will remain in place and be completely enclosed, as well as the entire pipe segment containing the flaw. Both the carbon steel cylinder and floor plate will be internally coated for corrosion prevention. The attached drawings (ET S-990236-1-M-800, Sheets 1 and 2) provide details of the repair.

The enclosure has been evaluated for design and seismic loading conditions by engineering and confirmed to be acceptable for the intended use. The engineering evaluation has also concluded that no safety related equipment would be rendered inoperable as a result of leakage at the repair location. Furthermore, the existing IPE Flooding Analysis has been determined to bound the flooding effects from a postulated rupture of the subject pipe.

Periodic inspections to confirm structural integrity and leak tightness of the more substantial repair will be performed as follows: 1) weekly visual VT-2 inspections for leakage and 2) quarterly VT-1 weld and VT-3 structural inspections. The history of corrosion rates on carbon steel in similar applications at Surry Power Station show the wall thickness of the cylinder would not be subject to significant loss during the proposed service life. UT thickness readings of the exposed cylinder would not provide information needed to monitor the structural integrity of the cylinder.

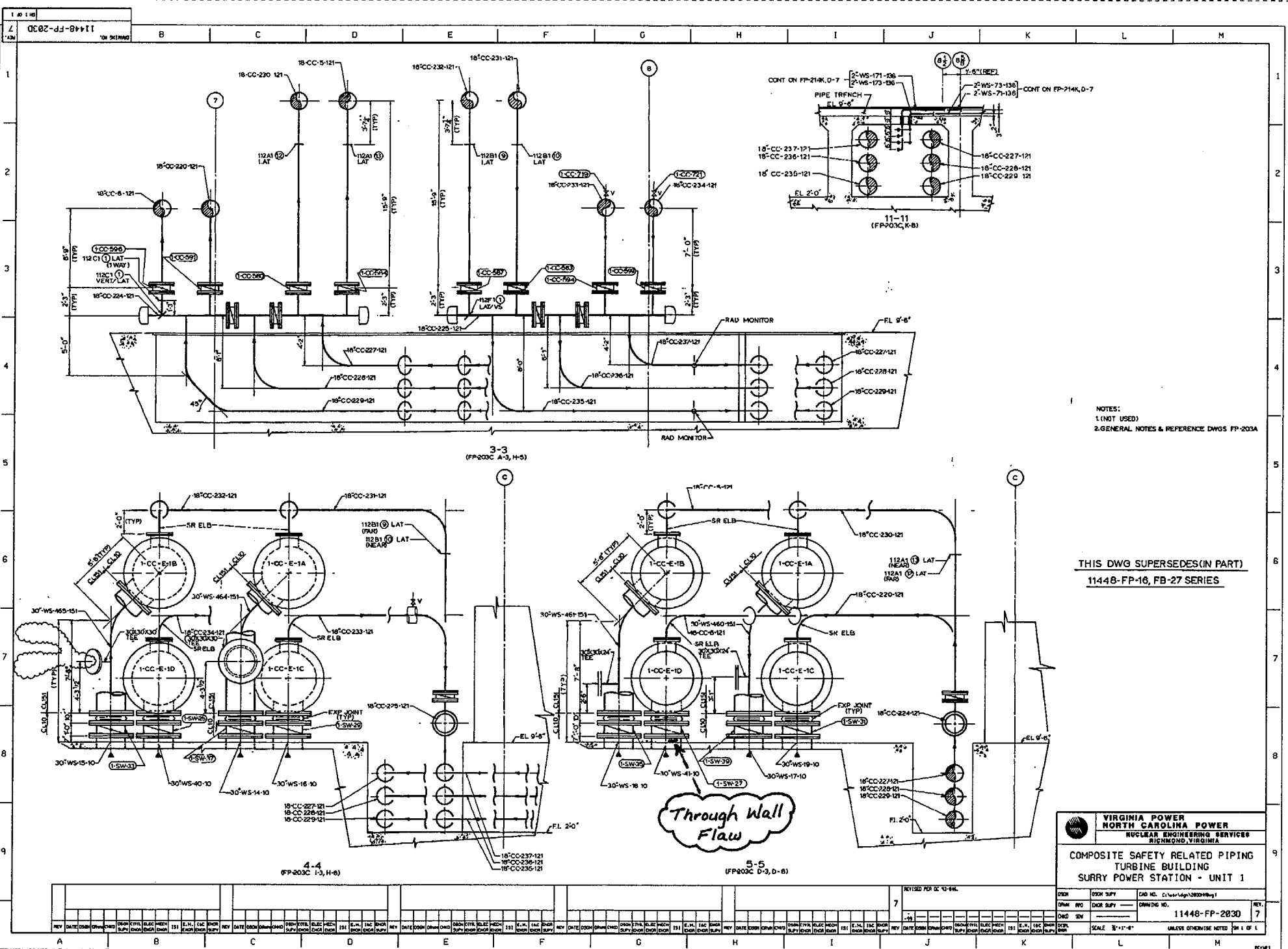
6.0 Conclusion

Therefore, in accordance with the provisions of Generic Letter 90-05 and 10 CFR 50.55a(g)(6)(i), relief is requested from the stated Code requirements to permit the following:

- The use of the more substantial temporary non-Code repair described herein to meet Generic Letter 90-05 requirements and to take the place of the present temporary non-Code repair detailed in our previous relief request, and
- An extension to permit the use of the more substantial temporary non-Code repair on 30"-WS-41-10 discharge piping beyond the time frame permitted by GL 90-05 until the Unit 1 Fall 2001 refueling outage.

Such relief will allow time for appropriate planning and development of a temporary jumper arrangement, which will likely require a license amendment, and will minimize operating time in a temporary configuration (i.e., using the SW jumper) by allowing coordination of other planned maintenance tasks that must be worked with the Unit 1 discharge tunnel in a de-watered condition. Most significantly, it is unlikely that the following activities can be completed in the limited time available prior to the next Unit 1 refueling outage: 1) the engineering effort required to develop an implementation package to install the temporary SW jumper and to implement the Code pipe repair, and 2) the licensing effort to develop, submit and receive NRC approval of a potential license amendment request.

Approval of this relief request will preclude the need to be in an undesirable temporary system configuration for two consecutive Unit 1 outages (i.e., using a temporary CCHX SW discharge jumper arrangement). This relief request will instead permit a reasoned, well-developed implementation plan to effect the Code pipe repair, while ensuring the structural integrity of the CCHX SW discharge pipe in the interim.



NOTES:
 1. (NOT USED)
 2. GENERAL NOTES & REFERENCE DWGS FP-203A

THIS DWG SUPERSEDES (IN PART)
 11448-FP-16, FB-27 SERIES

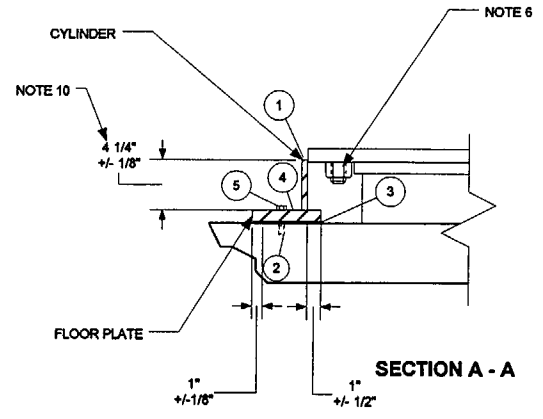
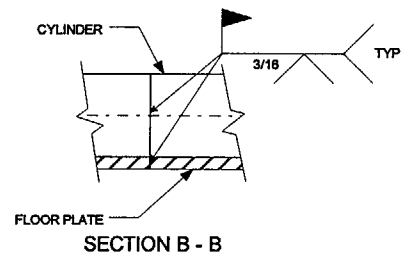
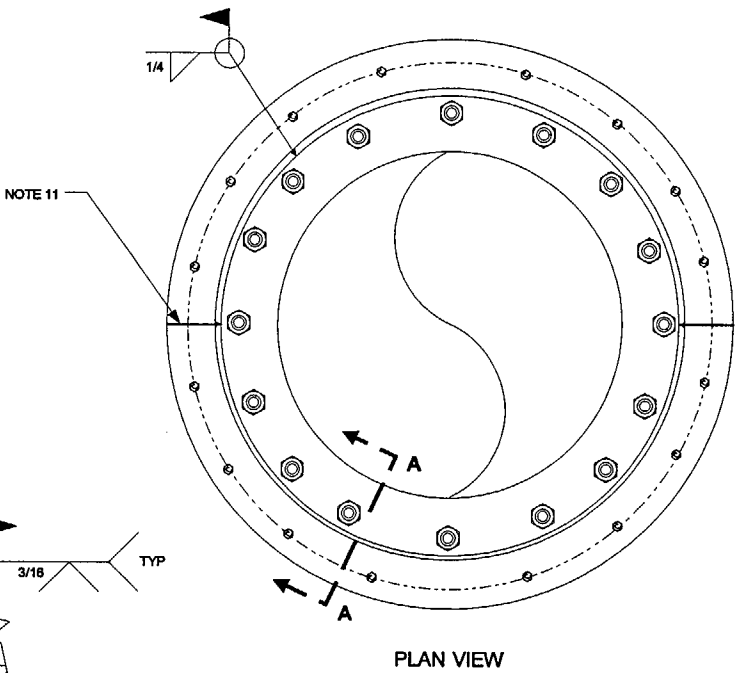
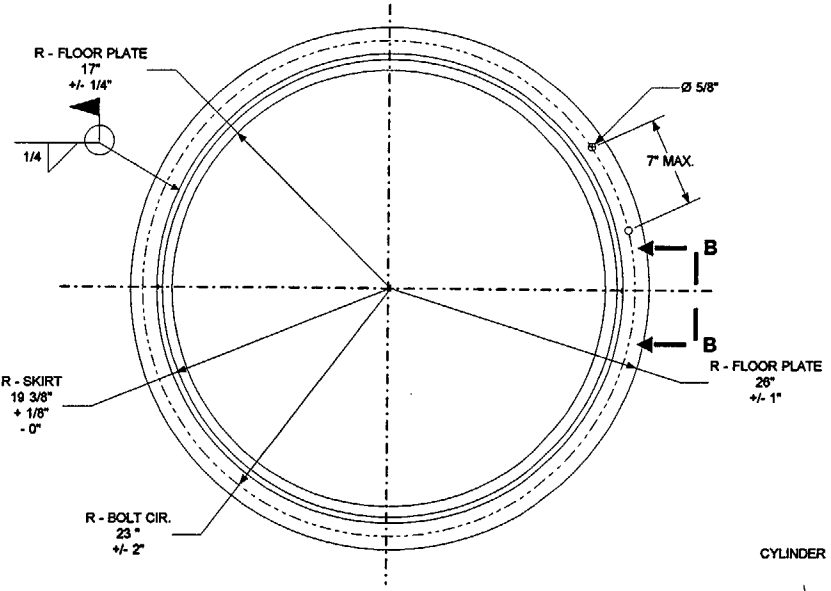
VIRGINIA POWER NORTH CAROLINA POWER
 NUCLEAR ENGINEERING SERVICES
 RICHMOND, VIRGINIA

COMPOSITE SAFETY RELATED PIPING
 TURBINE BUILDING
 SURRY POWER STATION - UNIT 1

REV	DATE	BY	CHK	APP	DESCRIPTION	REV	DATE	BY	CHK	APP	DESCRIPTION	REV	DATE	BY	CHK	APP	DESCRIPTION	REV	DATE	BY	CHK	APP	DESCRIPTION
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REV	DATE	DESCRIPTION	BY	IND. REV

REV	DATE	DESCRIPTION	BY	IND. REV
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SEE PAGE 2 OF 2 FOR NOTES AND MATERIAL LIST

CALCULATION CE 1482

 VIRGINIA POWER COMPANY - DEO-CIVIL/MECHANICAL SURRY STATION - UNITS		ET S-99-0236, REV. 0, ATTACHMENT A				
		MORE SUBSTANTIAL NON-CODE REPAIR 30"-WS-41-10 SURRY UNIT 1 - OPTION 3				
PREPARED BY J.O. HEADRICK	INDEPENDENT REVIEWER M.S. WHITT	DATE 11-1-99	DRAWING NO. ET S-990236-1-M-800	QA CAT. NS	PAGE 1 OF 2	REV 0

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		BY
		DESCRIPTION
		DATE
		REV
		ISSUED FOR CONSTRUCTION
		DATE
		REV


MATERIAL LIST

ITEM	QTY.	QA CAT.	DESCRIPTION
1	AS REQ	NS	PLATE, STRUCTURAL, 1/2" THICK, CS ASTM A-36 ROLL TO 19 3/8", + 1/8", - 0" RADIUS
2	AS REQ	NS	HDI DROP IN ANCHORS, 1/2" DIA. STAINLESS STEEL, HILTI ITEM NO. 00045789
3	AS REQ	NS	GASKET MATERIAL, 1/4" THICK, NEOPRENE
4	AS REQ	NS	PLATE, STRUCTURAL, 1" THICK, CS ASTM A36
5	AS REQ	NS	SCREW, CAP, HEX HEAD, 1/2" DIA X 2 1/2" LG, 13 TPI, SS ASTM A193 GR. B8M CLASS 2
6	AS REQ	NS	ADHESIVE, NEOPRENE CEMENT

NOTES:

1. THE EXISTING FLOOR COATING TO BE REMOVED TO PROVIDE A FLAT, SMOOTH SURFACE UNDER THE FLOOR PLATE.
2. THE RIM OF THE FLANGE ON 30"-WS-41-10 TO BE SANDED OR GROUND IN PREPARATION FOR WELDING.
3. INSTALL THE HDI DROP-IN ANCHOR BOLTS IN ACCORDANCE WITH THE APPLICABLE GMP.
4. TORQUE ITEM 5 TO 22 FT-LBS. MAXIMUM BEFORE WELDING CYLINDER TO FLANGE RIM.
5. COAT THE I.D. AND O.D. OF CYLINDER PLATE IN ACCORDANCE WITH NUS 3004 PRIOR TO INSTALLATION IN THE FIELD.
6. PRIOR TO INSTALLING ENCLOSURE, COAT THE EXISTING FLANGE FASTENERS, THAT WILL BE ENCLOSED, WITH A LIGHT COAT OF FEL-PRO.
7. FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH EXISTING APPROVED PROCEDURES.
8. QUALITY PERSONNEL TO VISUALLY INSPECT AND NDE TO PERFORM A SURFACE EXAMINATION OF FINISHED WELDS IN ACCORDANCE WITH APPROVED PROCEDURES.
9. THERE ARE NO POST INSTALLATION TESTS THAT ARE REQUIRED.
10. ADJUST HEIGHT OF CYLINDER BY WELDING OR GRINDING TO ACHIEVE A 1/8" MAXIMUM OVERLAP WITH THE LOWER EDGE OF THE EXISTING PIPE FLANGE.
11. CYLINDER AND FLOOR PLATE TO BE FABRICATED IN TWO 180 DEGREE SEGMENTS.
12. TRIM ITEM 3, GASKET, TO THE OUTSIDE TOLERANCE OF THE BOLT CIRCLE.
13. ITEM 3, GASKET, MAY BE MADE IN SEGMENTS, WITH DIAGONAL JOINTS, AND GLUED TO FLOOR PLATE. SECTION UNDER WELDS TO BE ATTACHED AFTER WELDING.

CALCULATION CE1482

 VIRGINIA POWER COMPANY - DEO-CIVIL/MECHANICAL SURRY STATION - UNITS	
PREPARED BY J.O. HEADRICK	ET S-99-0236, REV. 0, ATTACHMENT A MORE SUBSTANTIAL NON-CODE REPAIR 30"-WS-41-10 SURRY UNIT 1 - OPTION 3
INDEPENDENT REVIEWER M.S. WHITT	
DATE 11-1-99	DRAWING NO. ET S-990236-1-M-800
QA CAT. NS	PAGE 2 OF 2
REV 0	