P-38A AFW PUMP

1.0 SCOPE

1.1 The purpose of this modification is to increase the flow capacity of the P-38A AFW pump mini-recirc line and to install flow indication on this line for ASME Section XI testing.

1.2 The scope of this procedure is to replace the existing 1-1/2 inch recirc line with a 2 inch line, add a flow orifice and transmitter, and change the setpoints for AF-4007 (P-38A aux feedwater pump recirc line control valve). In addition, two supports in the pump discharge line will be modified.

1.3 The installation will be broken into two sections called Phase I and Phase II. Phase I will isolate the recirc line return header for all four AFW pumps, cut and cap the existing recirc line on the P-38A pump and install the new recirc line for P-38A up to the new manual valve AF-27. A hydrostatic test will then be completed and the recirc line return header returned to service. Phase II will complete the mini-recirc line work for P-38A from the tie-in at the pump discharge line up to new manual valve AF-27. Phase II will be done with P-38A out of service under a 7 day LCO. All electrical and I&C work will be completed during Phase II. The two phases may be worked in series or simultaneously depending on available manpower. Leak and functional testing of the new components will be performed prior to declaring P-38A operable and ending the 7 day LCO.

1.4 This is QA scope work.

QA Scope Clarifications:

The control valve (AF-4007), piping, check valve, and sockolet upstream of AF-4007 are QA scope. The piping, fittings, valves, etc. downstream of AF-4007 are non-QA scope. All support hardware is to be QA.

NOTE: Any representative from the site construction and engineering group may sign for the RE in this IWP.

2.0 PRE-INSTALLATION REQUIREMENTS

2.1 References:

2.1.1 Working drawing(s):

PBA-1070 sheets 1, 2 and 3
SK-AFW-002/88-099
SK-AFW-008/88-099
SK-AFW-011/88-099
SK-AFW-012/88-099
SK-AFW-013/88-099
SK-AFW-016/88-099

2.1.2 Permanent drawing(s):

Bechtel E-98 sheet 4
Bechtel M-209 sheet 4
Bechtel M-217
Bechtel P-103

2.1.3 Approved setpoint change for dPIS-4007.

2.1.4 Spec sheet for flow orifice for transmitter calibration.

2.1.5 Calibration sheet for flow transmitter AF-04050A.

2.1.6 Cable and raceway schedule for IWP 88-099*B1.

2.1.7 Cable and raceway installation and termination tickets for IWP 88-099*B1.

Responsible engineer has assured that all references listed above are approved and are either with the proper installation group, attached or readily available to the installation group.

R.E. John T. Schroeder Date 9/6/91

2.1.8 MI 5.2, "Air Operated Valves"

2.1.9 MI 7.1, "Installation Of CEAs," or equivalent

2.1.10 MI 32.1, "Flange and Closure Bolting," or equivalent

2.1.11 MI 32.4, "Guidelines for Exclusion of Foreign Material from Plant Systems," or equivalent

2.1.12 The installation is to be in accordance with B31.1-1967.

2.1.13 Welding Procedures: Phillips-Getschow WPS 1, WPS 8, WPS 8-1, and AWS D1.1.

2.1.14 MI 26.1.1, "General Instructions for Crimp Style Cable Terminations, Splices, and Connections"

2.1.15 PB-196, "Specification for Non-Safety Related Electrical Installation"

2.1.16 MI 32.8, "Guidelines for Opening Piping Systems"

2.1.17 MI 32.9, "Erection of Tube and Clamp Sectional Scaffolding"

2.1.18 Rosemount Tech Manual No. 00325

2.2 Background References (those references not needed to perform work):

2.2.1 MR 88-099, Design Package B

2.2.2 Calculations N-91-063 and N-91-069.

INITIALS

2.3 Installation Preparation Activities

2.3.1 The Bill of Materials (BOM) is attached to this IWP.

The responsible engineer has assured that all materials on the BOM are on site, available for the modification, and QA released. JAS R.E./L.E.

2.3.2 CHAMPS Nos. and labels for the new transmitters, power supplies and flow orifices will be requested as a closeout item for the mod. ID tags for the equipment being replaced (i.e. control valve, manual valve, ... etc.) will be transferred from the old components to the new components in the steps of the IWP.

2.4 Prefabrication Work

NOTE: Using the referenced working drawings, the layout of the piping run should be verified before beginning pre-fab work.

NOTE: The flow orifice flange must be oriented so that the sensing line connections will be at the horizontal centerline of the pipe when installed.

2.4.1 Prefabricate as much of the piping run and supports as possible in accordance with the referenced working drawings. Do not attach the sockolet or half coupling to the piping at this time. Visual examinations of all butt welds at fit-up, root pass, and completion is to be performed. A visual examination of the final pass on all socket welds and support welds is to be performed. JAS PG

2.4.2 The below listed electrical contractor work may begin at this time, the connection to the outlet powered from BKR 7-L-25 is not to be made until specifically called out in the installation section.

NOTE: All cables and raceways shall be installed per Specification PB-196. Raceways shall be seismically supported. Complete attached installation and termination tickets for cables and raceways.

Install TB-141, TB-141A, TB-142, conduit TB-142-1, terminal block TB-1 and the transmitter power supplies FQ-04050A and FQ-04050B. The flexible conduit from TB-141 to the transmitter (4050A-1) may be connected once the transmitter is installed in place. Pull all cables and make the terminations with exception of the connection to the outlet as stated above and with exception to cable I4050BA (for the P-38B transmitter). Reference drawings SK-AFW-011/88-099 and SK-AFW-012/88-099, the cable and raceway schedules, and installation and termination tickets attached. Riepe

INITIALS

The responsible engineer has assured that all piping prefabrication is completed and available for the modification.

R.E. John A Schroeder Date 9/6/91

2.5 Identification of Permits Required

2.5.1 The MWRs for the IWP have been written and submitted to CHAMPS. The MWR numbers have been recorded on the IWP coversheet.

2.5.2 Ignition control permits will be required and shall be obtained by the contractor supervisor when needed.

2.5.3 Tag outs are done in two phases and will be completed as part of the installation. In addition, the tagging out of the power for the electrical outlet being tied into for transmitter power will be completed in the installation steps of Phase II so that the duration that outlet power is out is minimized.

2.6 Personnel Safety Concerns

Use standard precautions when cutting, welding, and grinding. Use care when initially opening the mini-recirc line since there are no drains in the mini-recirc lines or the common return header and therefore a significant amount of water will be present. Contain any water drained from these lines.

2.7 Pre-Installation Discussion

2.7.1 A field walkdown shall be performed to verify that all aspects of the procedure may be performed as intended.

Inst. Sup. John A Schroeder Date 9/6/91

2.7.2 A pre-installation discussion with the installation group representatives, testing group representative, and the acceptance group representative has been performed.

R.E. John A Schroeder Date 9/6/91

2.8 PG-QC has been asked to submit Form SB 190 (Ref. ILHR 41.56) and to notify the ANI. Per Document Checklist

Inst. Sup. John A Schroeder Date 9/6/91

INITIALS

3.0 INSTALLATION

NOTE: Phase I and Phase II may be worked simultaneously if desired.

3.1 Installation Description

NOTE: If any of the steps cannot be completed as written or a change is necessary to complete the task, work must stop and the situation must be discussed with the responsible engineer, an SCE group member, or the installation supervisor.

3.1.1 Phase I: Equipment Isolation and Tag Out

The pre-installation requirements for Phase 1 have been met and it is acceptable to proceed with the Phase 1 tag out.

R.E. John A Schneider Date 9/6/91

NOTE: Inservice aux feedwater pumps are considered operable with their respective mini-recirc lines isolated if the discharge path for each pump is maintained open to at least one steam generator.

***CAUTION*: IF AN AUX FEEDWATER PUMP AUTO STARTS OR NEEDS TO BE RUN, DO NOT OPERATE THE PUMP AT A DISCHARGE INDICATED FLOW OF <50 GPM WHEN THE MINI-RECIRC LINE IS ISOLATED.**

a. Adjust AF-4012 controller to maintain a minimum position of 10% open by performing the following, I&C to coordinate work with Operations.

1. Station one man at AF-4012 to measure valve movement.

2. Adjust the high limit on PC-4012 until valve moves between 1/16 and 1/8 inch open. AF-4012 adjusted. I&C

b. Stroke AF-4012 to verify operation. VIA PBF 2059 OPS

c. Adjust AF-4019 controller to maintain a minimum position of 10% open by performing the following, I&C to coordinate work with Operations.

1. Station one man at AF-4019 to measure valve movement.

INITIALS

2. Adjust the high limit on PC-4019 until valve moves between 1/16 and 1/8 inch open. AF-4019 adjusted. — I&C

d. Stroke AF-4019 to verify operation. VIA P&F 2059 — OPS

e. Post Temporary Information Tags as directed by Temporary Information Sheets 91-30, 91-36 and 91-37 — OPS
Done

f. Tag out the system per the following list.

COMPONENT ID	DESCRIPTION	POSITION
AF-15	1P-29 mini-recirc manual isol.	Shut
~~AF-27~~	~~P-38A mini-recirc manual isol.~~	~~Shut~~
AF-40	P-38B mini-recirc manual isol.	Shut
AF-53	2P-29 mini-recirc manual isol.	Shut
AF-1	T-24A/B CST mini-recirc isol.	Shut

Delete This Tag. JAS 9/8/91 KS 9/9/91

Tag Series 91-672 — OPS

NOTE: Both the Phase I tag out in step 3.1.1 and the Phase II tag out in step 3.1.3 are to be completed before allowing work on Phase II or Phase II. JAS 9/8/91 KS 9/9/91

The pre-installation requirements for Phase 1 have been met and it is acceptable to proceed with Phase 1 of the installation.

DSS _____ Date 9/9/91

3.1.2 Phase 1: Installation

NOTE: Individual and common recirc headers cannot be adequately drained. The horizonal 3" header may have to be siphoned to create suitable welding conditions.

a. Drain the system ~~by cutting or drilling~~ the P-38A mini-recirc line or by removing the bonnet ~~downstream~~ of the existing AF-27, and/or by removing relief valve AF-4035 ~~in the common mini-recirc~~ return header. Control drainage as well as possible by using hoses, catch basins, etc. Coordinate with OPS as necessary. — PG
Done JAS 9/8/91 KS 9/9/91

b. Remove relief valve AF-4035 from the common mini-recirc return header if not already done and set up an Argon purge for welding. — PG
JAS

INITIALS

c. Cut the existing 1-1/2" recirc line for P-38A close to the 3" common recirc header and siphon the water from this header as necessary to provide a suitable welding environment. JAS PG

d. Remove the section of the existing recirc line from the 3" common recirc header to the first elbow downstream of AF-27. Also remove the existing support in the vertical section of this line. JAS PG

e. Weld a 1-1/2" cap (see BOM) on the cut off line. Visually inspect the new weld. JAS PG

NOTE: Support the new recirc line spoolpiece installed in the next step with a temporary support rated for 400 lb.

f. Install the prefabricated section of piping which includes the new AF-27 by making a new penetration into the 3" common recirc header and welding in the half coupling per SK-AFW-002/88-099. Visually inspect all new piping welds. New support DB3A-1003G may be installed per the referenced working drawings at this time. JAS PG

g. Remove the argon purge from the piping connection for relief valve AF-4035. JAS PG

NOTE: Place the red tag installed in the next step on the tag series created for Phase II if two separate tag series will be used. ~~Note that for a period of time, there will be tags on both the old and new AF-27 valves~~. JAS 9/8/91 KS 9/9/91

h. Red tag the new AF-27 valve shut. SD OPS

i. Align the system as necessary and hydro the mini-recirc header per the PBNP 3.2.5 sheet attached. Connect the hydro rig to the flanged connection for relief valve AF-4035. Document the hydro on the attached hydro sheet. KS OPS

j. After a satisfactory hydro, replace relief valve AF-4035 using a new 2" flexitallic gasket. Torque nuts to 60 ft-lbs using a staggered pattern. PG

INITIALS

k. Clear red tags for AF-15, 40, and 55, and lock these valves open. Also clear the red tag for AF-1. OPS

Delete Steps moved TO step 5.2.2 SAS 9/12/91

~~l. Set the high limit on controller PC-4019 to 51 milliamps.~~ ~~OPS~~

~~m. Stroke AF-4019 to verify operation.~~ ~~OPS~~

NOTE: Retain Temporary Information Tag for use with the P-38B Recirc. Mod.

n. Remove the temporary Temporary Information Tags for 1P-29, and 2P-29 ~~and P-38B~~ Temporary Information Tags 91-30 ~~and 91-97~~. SAS 9/12/91 SAS 9/12/91 OPS

NOTE: At this time the 1P-29, and 2P-29, ~~and P-38B~~ auxiliary feed pumps should be considered inservice with no restrictions on discharge flow. DSS

3.1.3 Phase 2: Equipment Isolation and Tag Out

Record the time and date at which P-38A is removed from service starting the 7 day LCO.

DSS _____ Time 0429 Date 9/9/81

INITIALS

Phase 2: TAG OUT

COMPONENT	DESCRIPTION	POSITION
1B52-12C	P-38A Breaker on 1B03	Racked Out
1B52-12C Control Power Fuses	P-38A Breaker control power	Off
AF-31	P-38A discharge to 1HX-1A	Shut
AF-32	P-38A discharge to 2HX-1A	Shut
AF-39	P-38A suction from CST	Shut
AF-4009	P-38A SW suction MOV control switch	Closed
AF-4009	P-38A SW suction MOV handwheel	Shut
1B52-328C	AF-4009 Bkr on 1B-32	Open
IA-353	AF-4007 IA supply	Shut
AF-33	P-38A discharge casing drain	Open
AF-33A	P-38A discharge high point vent	Open
AF-33B	P-38A discharge high point vent	Open

Tag Series 91-673 OPS

NOTE: Retain Temporary Information Tag for use with the P-38B Recirc. Mod.

Remove the temporary Temporary Information Tag for P-38A, Temporary Information Tag 91-36. OPS

INITIALS

3.1.4 Phase 2: Installation

The Isolation requirements for Phase 2 have been met and it is acceptable to proceed with the installation.

R.E. _____ Date 9/4/91

DSS _____ Date 9/9/91

Disconnect the solenoid valve and limit switches from the existing AF-4007. New limit switches will be used on the new AF-4007 and therefore the cabling is to be disconnected. The solenoid valve will be reused, therefore it's cabling may be left connected. Ensure that disconnected cables are adequately labeled for reconnection and fill in the attached wire removal form (EQR-36). Reference Dwg. E-98 Sheet 4. Save the solenoid valve for use on the new control valve.

JAS
Pieper/PG

NOTE: *The Phase 2 recirc line mechanical work, discharge line mechanical work and Electrical/I&C work as broken down in Sections 3.1.5, 3.1.6, and 3.1.7 may be worked simultaneously as practical. The steps within the sections are to be completed in order.*

3.1.5 Phase 2 Recirc Line Mechanical Work

NOTE: *Rinse out all new components with DI water before installation and wipe down the outer surfaces after installation.*

a. Remove the remainder of the old mini-recirc line up to and including the connection to the 3" pump discharge line. Also remove the existing support downstream of existing valve AF-27. Save the ID tags from the removed components.

JAS
PG

b. Install the base plates for new supports DB3A-1001G, DB3A-1002G (and install support DB3A-1003G if it was not previously installed). Remove the angle from the support which was immediately downstream of the old mini-recirc control valve (support DB-3-H207) and grind the base plate smooth.

JAS
PG

c. Inform the ANI of the schedule for installing the sockolet in the following step so the ANI may witness the fit-up, root pass, and final pass inspections if desired.

JAS
PG

INITIALS

NOTE: In the next step the flow orifice must be oriented so that the sensing line connections are located at the horizontal centerline of the pipe. After installing the orifice plate in-between the flanges, tighten the flange studs per MI 32.1 or equivalent.

d. Install the new recirc line from the sockolet fitting on the discharge header up to the new AF-27 (installed in Phase I). See SK-AFW-008/88-099 for details. Perform visual exams on each butt weld at fit-up, root pass, and at completion. Visually inspect all welds at completion. Perform PT exam of 2" X 3" sockolet (open butt end) at connection weld to 3" header at the root pass and the final pass. Also perform PT examinations of the two socket welds upstream of the check valve. The NDE acceptance criteria is to be per B31.1, 1986.

JAS
PG

e. The NDE described in the step above has been documented and was found to be acceptable.

PG QC Inspect. [signature] Date 9-12-91

f. Complete the installation of piping supports on the new mini-recirc line (i.e. Supports DB3A-1001G, DB3A-1002G, DB3A-1003G). As shown on the referenced working drawings. For the DB-3-H207 support, weld on a 3" X 3" X 3/8" A36 angle onto the base plate via a 1/4" fillet weld all around and install a 3/8" diameter U-Bolt for the 2" pipe. If necessary, weld on a shim via a 3/16" fillet weld on both sides. There is to be an approximate 1/16" gap between the pipe and U-Bolt on all sides. Perform visual exams on all new support welds.

JAS
PG

g. Install the ID tags which were saved from the old mini-recirc line onto the new components in the mini-recirc line. Attachment cable, crimps, and tools are available from CHAMPS.

JAS
PG

INITIALS

3.1.6 Phase 2 Discharge Line Mechanical Work

a. Rig a temporary support for the P-38A discharge line just upstream of check valve AF-103 near existing support DB3-H11 as described by the RE below;

Place a jack stand welded to a base plate beneath valve AF-4022.

R.E. John A Schneider Date 9/9/91 JAS PG

b. Remove existing support DB3-H11 from the P-38A discharge line just upstream of check valve AF-103 (see Drawing P-103 for location). Grind off and buff the area where the stanchion to pipe weld was. JAS PG

c. Measure the wall thickness of the pipe at the ground off area. Record the minimum wall thickness noted below. The minimum acceptable wall thickness is 0.2625 inches.

Min. Wall _____ inches acceptable see UT Report [signature] PG

d. Install the new DB3-H11 support per Drawing SK-AFW-016/88-099. JAS PG

e. Remove the temporary support placed on the piping for the DB3-H11 support work. JAS PG

3.1.7 Phase 2 Electrical and I&C Work

NOTE: All cables and raceways shall be installed per Specification PB-196. Raceways shall be seismically supported. Complete attached installation and termination tickets for cables and raceways.

a. Install support for flow transmitter per Drawing SK-AFW-013/88-099. The transmitter must be located below the pipeline. The exact location is to be per responsible engineer direction. JAS PG

NOTE: Steps 3.1.7.f. through 3.1.7.h.a may be worked at any time, however must be completed in order.

[signature] 9/12/91

INITIALS

b. Install transmitter and manifold on its support and install 3/8 inch SS tubing from the transmitter to the orifice plate, per Rosemount Tech Manual, Control No. 00325. Stainless steel Swagelok fittings and Whitey valves (see BOM) are to be installed as necessary. Route the tubing so that it slopes up from the transmitter to the orifice flange. — JAS, I&C

New Lugs installed on cable 2E1B12C To Valve AF-4007
Lugs 53425-1 AAR9175
Lugs 53418-1 AR91

c. Mount the existing solenoid valve on the new AF-4007 valve and reconnect the air lines and cable. Reconnect the cable removed from the old limit switches onto the new limit switch. Reference the attached wire removal forms. — Pieper/PG

d. Clear the red tag on the instrument air supply to AF-4007, clear IA-353. Snoop Lines — OPS

e. Set the regulator for valve AF-4007 to 100 psig. — OPS

f. Tag out the following circuit prior to making the final terminations for transmitter power. Lighting Panel 7L, Circuit 25, AFW area Receptacles. Position: OPEN — OPS

Lugs 53425-1 PBN.PH5

g. Pull and terminate cable 7L25C. Reference drawings SK-AFW-011/88-099 and SK-AFW-012/88-099, the cable and raceway schedules, and installation and termination tickets attached. ~~Complete all electrical work associated with this IWP at this time.~~ — Pieper

h.a. Remove the red tag for breaker 7-L-25 issued in the above step and close the breaker. — OPS

h.b. Complete all electrical work. — JAS

i. Calibrate new transmitter FIT-04050A per the attached calibration sheet. — JAS, I&C

j. Set the high limit on controller PC-4012 to 51 milliamps. — JAS, I&C

INITIALS

3.2 As-Built Description

This IWP was installed by:

PG Phillips, Getchow Co.

Elect. Maint. Work Pieper

I&C PBNP I&C Personnel

List any ECRs, NCRs, or other considerations that effect the "as-built" condition of the modification, see copies attached

ECRs PB-91-053, JPS 054, 055, 056, 057, 058 and 059
T.A. Schneider To Tom Rupkin, P/G memo in Support DB3A-P016 dated 9/
T.A. Schneider To Lee Zeigler, P/G Memo in Support DB3-H11 dated 9/

3.3 The installation was completed as described above.

Inst. Sup./WE [signature] Date 9/13/91

Inst. Sup./I&C [signature] Date 9-13-91

Inst. Sup./MTN MTN did not perform any work [signature] Date 9/12/91

R.E. [signature] Date 9/13/91

The QC requirements of this installation have been completed. The QC requirements consist of hydrostatic testing and visual and surface inspection of welds as described above.

PG QC Inspect. [signature] Date 9-13-91

4.0 TESTING

4.1 Testing Scope

The testing section will perform hydro and leak checks on the portions of the new piping line which were not hydro tested in the installation section. Functional tests of the new mini-recirc valve, the pump discharge control valve and the pump itself will also be performed. By taking readings on the new transmitter during performance of IT-10, mini-recirc line flow capacity will be verified. In addition, the setpoints for the new mini-recirc valve will be adjusted in this section. It can be noted that visual inspections of all welds and all necessary NDE was completed in the installation section of the IWP.

4.2 Testing Prerequisites

4.2.1 Clear all red tags associated with this IWP. OPS

			INITIALS
	4.2.2	Fill and vent pump P-38A.	OPS
	4.2.3	A revised copy of IT-10 which accounts for the modification is available for use. Rev. 22	OPS
4.3		Testing and Testing Acceptance Criteria	
	4.3.1	Change setpoints on dPIS-4007 from 30 and 75 gpm to 75 and less than or equal to 95 gpm respectively. See the approved setpoint change sheet attached.	I&C
	4.3.2	Stroke P-38A discharge valve AF-4012 and observe full valve travel to ensure the high limit on PC-4012 was returned properly. The valve operated properly.	OPS
	4.3.3	Stroke the new mini-recirc valve AF-4007 by use of the manual handwheel to ensure proper operation. and check operation of limit switches.	OPS
N/A	4.3.4	~~Stroke the new mini-recirc valve AF-4007 via the control room switch and observe valve travel and indicating lights to ensure proper operation of the valve and connection of the limit switch and solenoid cabling. The valve operated properly.~~	N/A there is no control room switch OPS
	4.3.5	Align system as necessary and hydro the DB-3 portion of P-38A recirc line between new check valve AF-115 and valve AF-27 per PBNP 3.2.5. See attached Hydro Data Sheet for this section of pipe. The results were acceptable per PBNP 3.2.5 and the test has been documented on the attached sheet.	OPS
	4.3.6	During performance of IT-10 in the following step take a flow reading from FIT-04050A while AF-4007 is open. 86 gpm The flow reading must be between 70 and 100 gpm.	OPS
	4.3.7	Perform the revised IT-10 on P-38A. An initial service leak test is to be performed on the new portion of piping between the pump discharge line and check valve AF-115. Attach a copy of the completed IT-10 and complete the PBNP 3.2.5 pressure test sheet attached. The results of the leak check and IT-10 were acceptable.	OPS

INITIALS

4.4 Testing Complete

The testing is completed and adequately tests the modification and the associated installation.

DSS [signature] Date 9/14/91

R.E. John A Schroeder Date 9/14/91

JAS 9/12/91

5.0 RESTORATION

5.1 Pre-Acceptance

The following items must be completed prior to acceptance:

5.1.1 All testing described above has been satisfactorily completed.

5.1.2 The ID tags from the components in the old min-recirc line have been transferred onto the equivalent component on the new mini-recirc line. → Done. JAS

5.1.3 Control Room P&ID M-217 has been revised to show the new components added by the modification. → Done. JAS

5.1.4 The Control Room copy of the setpoint document STPT 14.11 has been marked up to list the new setpoints associated with mini-recirc valve AF-4007. → Done JAS

5.1.5 IT-10 has been temporarily or permanently revised to account for the modification. → Done, Rev. 22 JAS

5.1.6 Close out of all the permits associated with this IWP has been initiated. MWRs attached

All of the above items have been completed, AFW pump P-38A may be returned to service.

R.E. or DSS [signature] Date 9/14/91

5.2 Return To Service

NOTE: The following step will make AF-4014 go full open for a period of time.
a. Set the high limit on controller PC-4012 to 51 ma [initials] I&C
b. Stroke AF-4019 to verify operation [initials] (OPS)
NOTE: Save Temp. Info. Tag 91-37 in the next step for the P38B mod.
c. Remove Temp. Info. Tag 91-37 for P38B [initials] (OPS)

1. Return AFW pump P-38A to service. Record the time and date at which this is completed ending the 7 day LCO. → 2.

DSS [signature] Date 9/14/91 Time 0327

6.0 ACCEPTANCE

This installation and the associated modification have been installed and tested and are acceptable.

Mgr. OPS or DSS [signature] Date 9/16/91

Return completed IWP and Modification to the responsible engineer.

PARTS LIST / BILL OF MATERIALS FOR FOR IWPs 88-099*B1 & B2

MOD REQUEST 88-099*B / ~~DRAWING / SKETCH NO.~~ ONE HALF QUANTITY LISTED REQUIRED FOR EACH IWP

ITEM NO.	QUANTITY REQUIRED	MATERIAL DESCRIPTION/ SERVICE RATING	VENDOR/ CATALOG NO.	LOT NO. / MOD BIN / P.O. NO.
1	2	2", 1500# class, Globe Valve, Conval Clampseal, Stainless Steel, SW	Conval # 1262-316	Lot # 9042059 Obtain From Mod Bin
2	2	2", 90° Elbow, SW Ends, S.S Type 304, 3000#	———	Lot # 9015019 Obtain From Stock
3	2	2" Flow Orifice Flanges, Flange Set with Bolting and gaskets, SS Type 304	———	P.O. # 185010 Obtain From Mod Bin
4	2	Flow Orifice Plate, SS Type 316	———	P.O. # 185010 Obtain From Mod Bin
5	2	2" 1500# Control Valve, SS	Copes Vulcan # 2IA88RG	P.O. # 183687 Obtain From Mod Bin
6	2	Flow Restricting Orifice, SS Type 304, SW ends Tag Nos. RO-4005, 4015	Borg Warner # 125885-CH	P.O. # RUSH Obtain From Mod Bin
7	2	Flow Transmitter with Integral Display, Supplied With Manifold	Rosemount #1150-1502 #1151DP-5-S-22-B1-M5	P.O. # 184161 Obtain From Mod Bin
8	2	6"x6"x4" Electrical Enclosure NEMA 12 JIC panel	———	P.O. # 160141 obtain From Mod Bin
9	2	Transmitter Power Supply	Rosemount #49-15-401	P.O. # 181528 In I&C Mod Bin
10	AS NEEDED	2", sch. 40, Seamless pipe, Type 304L	———	P.O. # 184859 Obtain From Mod Bin
11	AS NEEDED	2", sch. 80, seamless pipe, Type 304L	———	P.O. # 184859 Obtain From Mod Bin
12	4	2", sch 40, 90° Elbow, SW, Type 304	———	P.O. # 184860 Obtain From Mod Bin
13	2	2", sch. 40, 45° Elbow, SW, Type 304	———	P.O. # 184860 Obtain From Mod Bin
14	2	2" half coupling, for use in 3" branch line, Type 304, 3000#	———	To Be Supplied By P.G. (CWN-88)
15	2	1½" sch. 40 pipe cap, SW, Type 304	———	P.O. 184860 Obtain From Mod Bin
16	2	2", 1500 # class, check valve, S.S. Type 316	Rockwell Edwards # 3674 F316J	Lot # 9041389 Obtain From Mod Bin
17	2	4"x2" 3000# Socklet Type Fitting Type 304	———	P.O. # 185076 Obtain From Mod Bin

Form PG-G02.1
Revi 1 1

PARTS LIST / BILL OF MATERIALS FOR

MOD REQUEST 98-099*B / DRAWING / SKETCH NO. _____

ITEM NO.	QUANTITY REQUIRED	MATERIAL DESCRIPTION/ SERVICE RATING	VENDOR/ CATALOG NO.	LOT NO. / MOD BIN / P.O. NO.
18	AS NEEDED	2", sch 80 seamless pipe, Type 316	_____	P.O. # 185036 Obtain From Mod Bin
19	4	3/8" whitey Valve, SS-1VS6, For Transmitter Isolation	Whitey # SS-1VS6	I&C To Obtain From Stock
20	4	3/8" Swagelok Tee, SS-600-3, For Transmitter Sensing Lines	Swagelok # SS-600-3	I&C To Obtain From Stock
21	4	3/8" Swagelok Plug, SS-600-P	Swagelok # SS-600-P	I&C To Obtain From Stock
22	AS NEEDED	3/8" S.S. Tubing, 0.065" wall Thickness, Type 304 or 316	_____	I&C To Obtain From Stock
23	AS NEEDED	Miscellaneous stainless steel Swagelok Fittings Needed for the Transmitter Lines	_____	I&C To Obtain From Stock
24	AS NEEDED	3/4" ϕ x 5" long Hilti Kwik Bolt II	_____	Lot # 9030407 Obtain From Stock
25		1/2" ϕ Hilti Kwik Bolt II	_____	Lot # 9030908 Obtain From Stock
26		1" ϕ Hilti Kwik Bolt II	_____	Lot # 9030911 Obtain From Stock
27		1/2" Thick A-36 Plate	_____	Lot # 9027700 Obtain From Stock
28		1" Thick A-36 Plate	_____	Lot # 9030198 Obtain From Stock
29		2"x2"x.1/4" Thick A-36 Angle	_____	Lot # 9027726 Obtain From Stock
30		C 4x0.1 Channel A-36	_____	Lot # 9028419 Obtain From Stock
31		C 4x0.25 Channel A-36	_____	Lot # 9030657 Obtain From Stock
32		2" Sch. 80 Pipe, A106 Grade B	_____	Lot # 9023143 Obtain From Stock
33	V	5/8"x2" Standard U-Bolt w/Nuts	Grinnel # 137N	Lot # 9027629 Obtain From Stock
34	AS Needed	2", Sch 80 Pipe, A106 Gr. B	_____	Lot # 9017704 Obtain From Stock

Form DC-G02.1
Revi 1

PARTS LIST / BILL OF MATERIALS FOR

MOD REQUEST 88-099+B / DRAWING / SKETCH NO. _____

ITEM NO.	QUANTITY REQUIRED	MATERIAL DESCRIPTION/ SERVICE RATING	VENDOR/ CATALOG NO.	LOT NO. / MOD BIN / P.O. NO.
35	AS Needed	3"x3"x 3/8" Angle A-36	———	Lot # 9030352 Obtain From Stock

TO: Tom Ropson, Phillips Getchow Co.

FROM: John A. Schroeder, PBNP

SUBJECT: P-38A Mini-Recirc Modification MR 88-099,
Support DB3A-1001G

DATE: 09/11/91

On one of the 1/2" Hilti bolt holes made for support DB3A-1001G there was another 1/2" hole made at 1-1/4 inches from this hole. This distance is within the required minimum separation of 3 bolt diameters (1-1/2 inches). However, since the empty hole is more than 2 bolt diameters away no reduction in HILTI capacity is required per the Nuclear Power Department CEA Design Guideline DG-C-01. Therefore, the 1/2" HILTI mentioned above may be installed in the intended hole at this time. The empty hole which will not be used is to be dry pack grouted and no cure time is necessary before setting the adjacent HILTI bolt.

John A. Schroeder

To: Lee Zingler, Phillips Getchow Co.

From: John A. Schroeder, PBNP

Subject: MR 88-099*B, AFW Mini-Recirc Mod. Support DB3-H11 (P38A Discharge Line)

The use of the Drillco diamond core bit to core out the 3/4" HILTIS which were embedded approximately 5" was an acceptable method of removing these HILTIS. The minimum embedment of the new 1" HILTIS placed in these holes was 6". Since the depth of the holes from 5" to approx. 8" was made with a HILTI II drill bit, there is no anchorage concern. In addition, a 1/4"ϕ weep hole is to be drilled in the pipe stanchion of support DB3-H11

John A. Schroeder
9/12/91

Wisconsin Electric POWER COMPANY

231 W Michigan PO Box 2046 Milwaukee WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR #: PB-91-053

Mod #: 88-099*B

Responsible Engineer: John A. Schroeder

Portions of mod are QA
QA Scope: [X] Yes [ ] No

System: AF

Equipment:
AFW Mini-Recirc Line for P38A

Reference Documents:
Drawing SK-AFW-008/88-099

Problem Description and Proposed Change:

Revision ∅ of the piping isometric for the P38A mini-recirc line can not be installed as shown. An existing pipe line interferes with the proposed routing in the horizontal section of piping downstream of manual valve AF-27. In addition, the dimensions in the horizontal run downstream of valve AF-4007 add up such that the piping stalls into the hallway by approx 1'.

Attachments. [ ] Yes [X] No

Initiated By/Date:	Preliminary Approval By/Date:	Resolution Needed by: Date:
John A. Schroeder 8/28/91	N/A	

Resolution: Revise the dimensions in the horizontal runs of piping as shown in the attached and move the 45° horizontal jog back in the line as shown in the attached marked-up sketch. Also increase the jog offset length to 9". Sargent & Lundy has verbally approved of this change. This portion of the piping is Non-QA. Note that the recommended distance between the control valve and flow orifice flange is 20-[illegible] pipe diameters, thus the 40" length is appropriate. See the memo from Sargent & Lundy attached.

Attachments: [X] Yes [ ] No

Change Required:

___ Specs: ________

___ Procedures: ________

X Drawings: SK-AFW-008/88-099 (to be as-built after the modification is complete)

___ Other: ________

Design Verification Required: [ ] Yes [X] No
Completed: Date:

MR Addendum Required: [ ] Yes [X] No
Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No
Completed: Date:

Resolution By/Date: John A. Schroeder 8/28/91

Responsible Engineer Review/Date: John A. Schroeder 8/28/91

QA Review By/Date: [signature]

Group Head Approval/Date: [signature] 8/28/91

Additional Reviews By/Date:

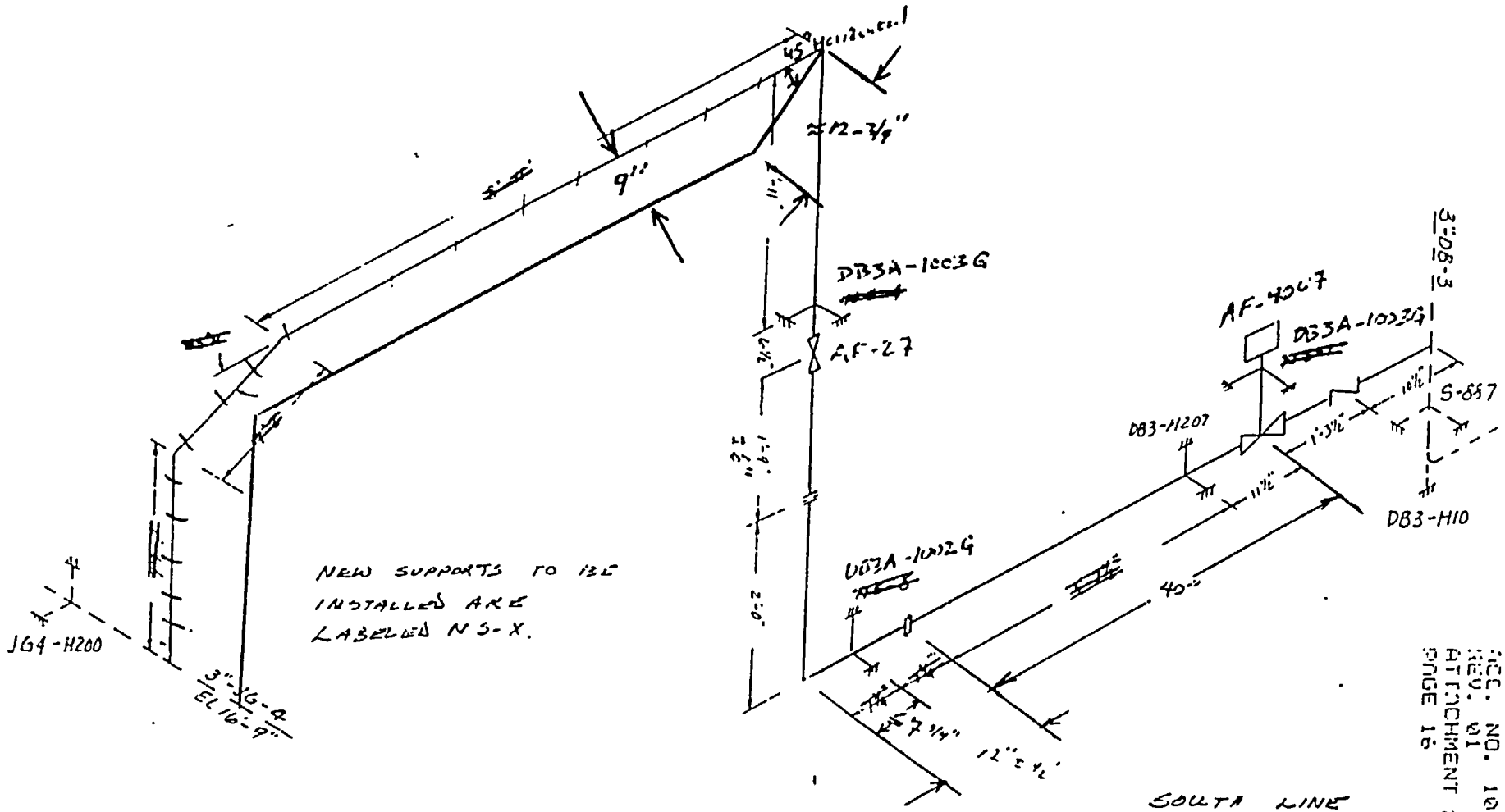
Implementation Completed By/Date:

Form QP 3-4 1
Rev. 1

N

AUXILIARY FEEDWATER RECIRCULATION LINE MODIFICATION

SK-AFW-008/88-099



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SARGENT & LUNDY
ENGINEERS
FOUNDED 1891
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780
(312) 269-2000

August 28, 1991
Project No. 6904-22

Wisconsin Electric Power Company
Point Beach Nuclear Power Plant - Units 1 and 2

Auxiliary Feedwater Recirculation Line Routing Changes

Mr. G. D. Frieling
Nuclear Engineering and Analysis Section
Point Beach Nuclear Plant
6610 Nuclear Rd.
Two Rivers, Wisconsin 54241

Attention: Mr. J. Schroeder

Dear Mr. Frieling:

Sargent & Lundy has reviewed the attached sketches provided by your Mr. J. Schroeder showing required routing changes to the original design of the Auxiliary Feedwater Recirculation Lines. Subsequent conversations with Mr. Schroeder have identified the following additional changes to the piping dimensions shown on the sketches:

- the horizontal runs containing control valves "NS-1" and "NS-2" will need to be shortened by approximately 18.5" from the dimensions shown on the sketches
- the above change will result in a corresponding 18.5" increase in the length of the horizontal runs beyond the first riser

These changes are necessary to avoid interferences in the field.

Based on an evaluation of existing stress margins and adjacent support capacities, the changes will hrve no adverse effect on the current analysis results. The dimension changes discussed above are acceptable; however, the locations of the supports near the risers ("NS-8" and "NS-9") and the supports near the control valves (DB3-H207 and DB3-H208) must be maintained at or near the dimensions shown on the sketches (relative to the risers and control valves).

Calculations justifying the above conclusions will be documented in Addendum A to the base stress analysis report (Subsystem 1DD3BC-2", Auxiliary Feedwater, Accession No. 100070, Revision 01, EMD Accession No. 066934).

Should you have any questions, please call me at (312) 269-6504.

Yours truly,

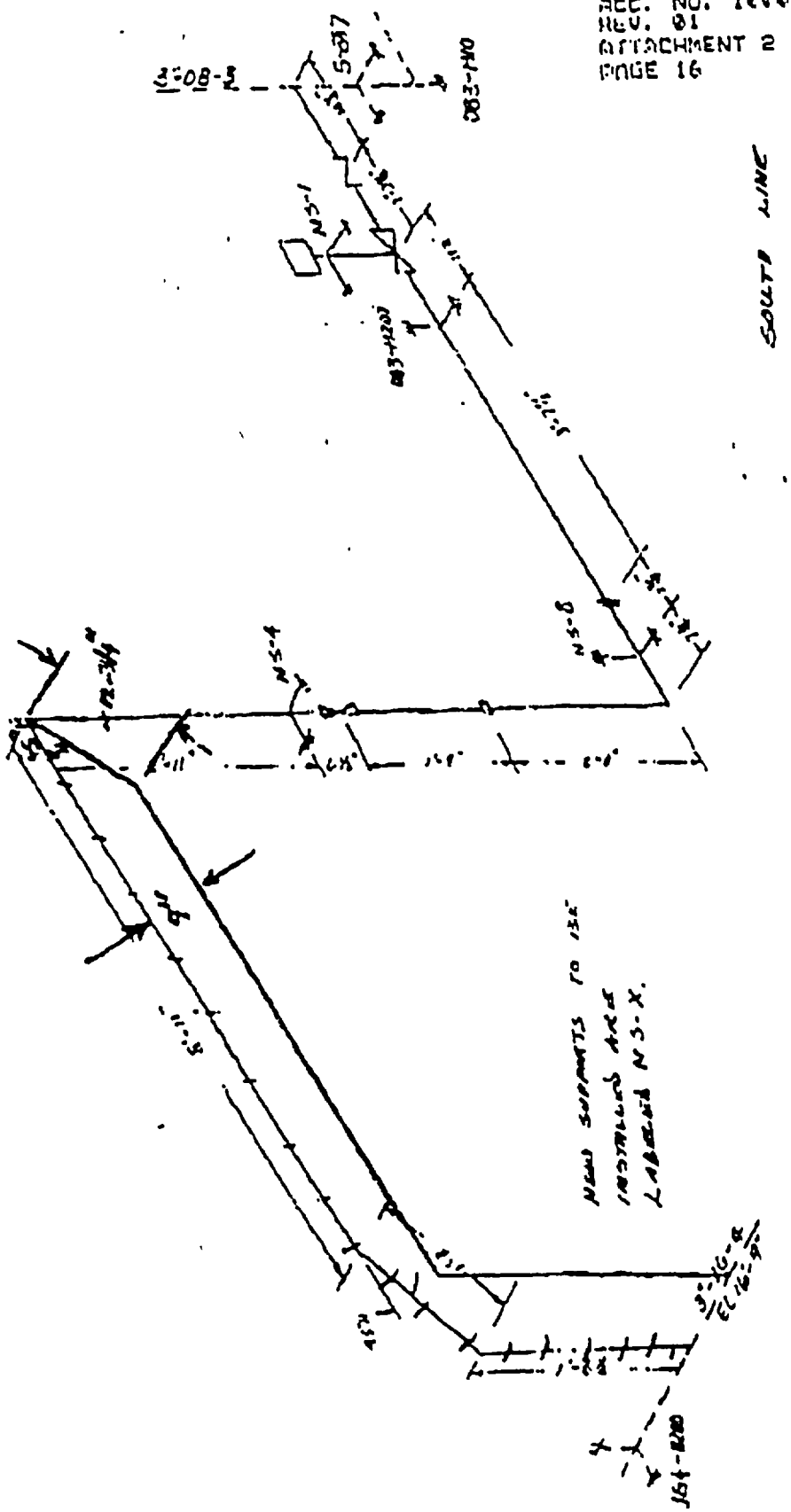
G. Z. Tokarski
Systems Project Engineer

Attachment
Copies:

M. A. Woznicki
A. Reimer
B. E. Lunde
G. T. Kitz
A. W. Szechowycz
D. E. Olson
R. Madugula

AUXILIARY FEEDWATER RECIRCULATION LINE MODIFICATION

SK-AFW-008/88-099



Wisconsin Electric POWER COMPANY
231 W Michigan, PO Box 2046, Milwaukee WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-054

Mod # 88-099*B

Responsible Engineer: John A. Schroeder

Portions Of Mod Are QA

QA Scope [X] Yes [ ] No

System: AF

Equipment: AFW Mini-Recirc Line For P38B

Reference Documents: Drawing SK-AFW-009/88-099

Problem Description and Proposed Change:

Revision Ø of the piping isometric for the P38B mini-recirc line can not be installed as shown. An existing pipe hanger interferes with the proposed routing in the horizontal section of piping downstream of manual valve AF-40. In addition, the dimensions in the horizontal run downstream of valve AF-4014 add up so that the piping sticks into the hallway by approx 18".

Attachments: [ ] Yes [X] No

Initiated By/Date: John A. Schroeder 8/28/91

Preliminary Approval By/Date: N/A

Resolution Needed by: Date:

Resolution: Revise the dimensions in the horizontal runs of piping as shown in the attached marked-up sketch. Delete the existing 45° jog shown on the isometric and add two 45° jogs of approx. 4" and 30" offset as shown in the attached marked-up sketch. Sargent & Lundy has verbally approved of this change. This portion of the piping is Non-QA. Note that the recommended distance between the control valve and flow orifice flange is 20-22 nominal pipe diameters, thus the 40" length specified is [illegible] approved. See the memo from Sargent & Lundy [illegible]

Attachments: [X] Yes [ ] No

Change Required:

__ Specs: ______

__ Procedures: ______

X Drawings: SK-AFW-009/88-099 (to be as-built after the modification is complete.)

__ Other: ______

Design Verification Required: [ ] Yes [X] No

Completed: Date:

MR Addendum Required: [ ] Yes [X] No

Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No

Completed: Date:

Resolution By/Date: John A. Schroeder 8/28/91

Responsible Engineer Review/Date: John A. Schroeder 8/28/91

QA Review By/Date: [signature] 8/28/91

Group Head Approval/Date: [signature] 8/29/91

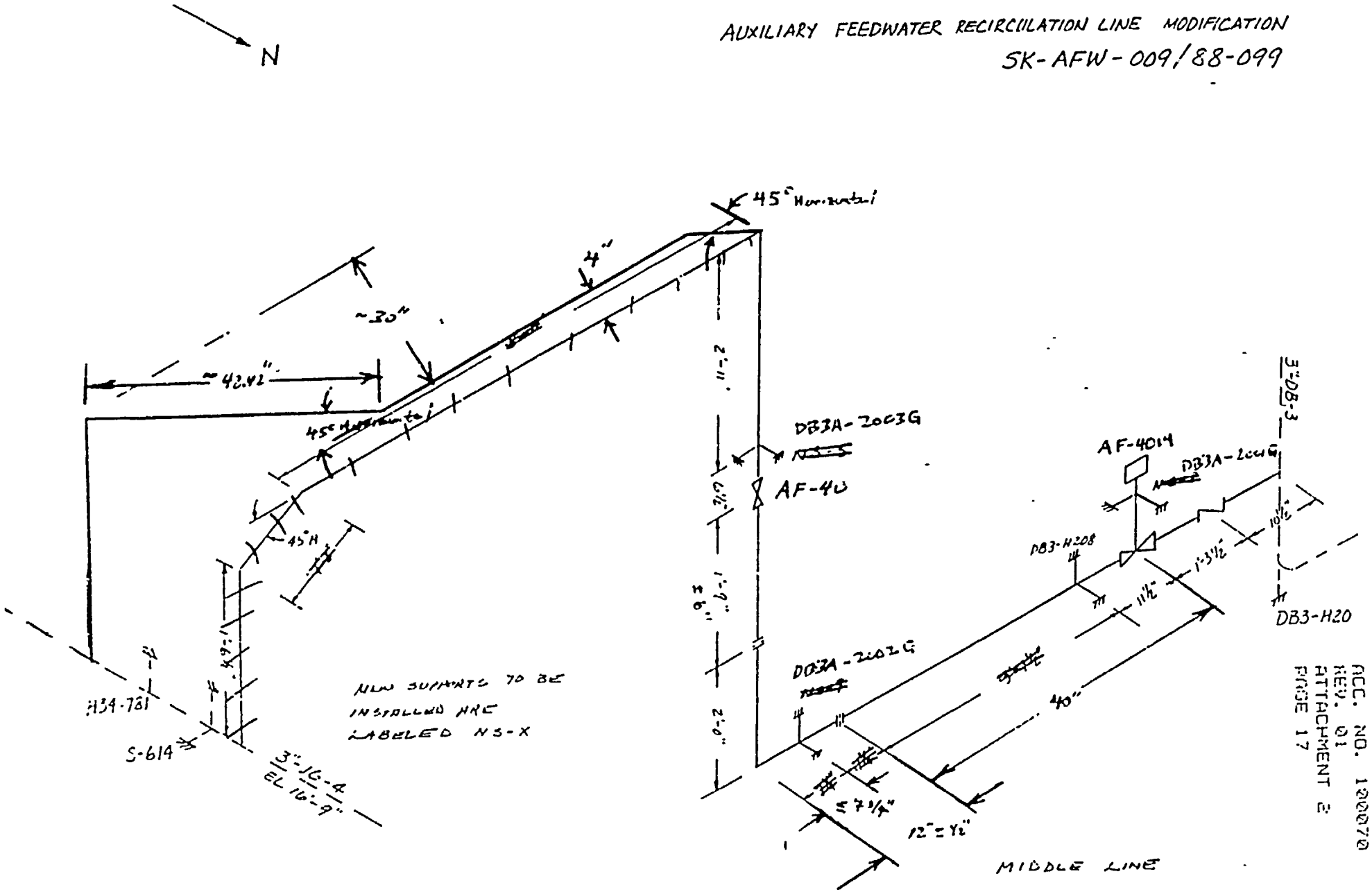
Additional Reviews By/Date:

Implementation Completed By/Date:

Form QP 3-4.1
Rev. 1

AUXILIARY FEEDWATER RECIRCULATION LINE MODIFICATION

SK-AFW-009/88-099



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SARGENT & LUNDY
ENGINEERS
FOUNDED 1891
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780
(312) 269-2000

August 28, 1991
Project No. 6904-22

Wisconsin Electric Power Company
Point Beach Nuclear Power Plant - Units 1 and 2

Auxiliary Feedwater Recirculation Line Routing Changes

Mr. G. D. Frieling
Nuclear Engineering and Analysis Section
Point Beach Nuclear Plant
6610 Nuclear Rd.
Two Rivers, Wisconsin 54241

Attention: Mr. J. Schroeder

Dear Mr. Frieling:

Sargent & Lundy has reviewed the attached sketches provided by your Mr. J. Schroeder showing required routing changes to the original design of the Auxiliary Feedwater Recirculation Lines. Subsequent conversations with Mr. Schroeder have identified the following additional changes to the piping dimensions shown on the sketches:

- the horizontal runs containing control valves "NS-1" and "NS-2" will need to be shortened by approximately 18.5" from the dimensions shown on the sketches
- the above change will result in a corresponding 18.5" increase in the length of the horizontal runs beyond the first riser

These changes are necessary to avoid interferences in the field.

SARGENT & LUNDY
ENGINEERS
CHICAGO

Mr. G. D. Frieling
Wisconsin Electric Power Company

August 28, 1991
Page 2

Based on an evaluation of existing stress margins and adjacent support capacities, the changes will have no adverse effect on the current analysis results. The dimension changes discussed above are acceptable; however, the locations of the supports near the risers ("NS-8" and "NS-9") and the supports near the control valves (DB3-H207 and DB3-H208) must be maintained at or near the dimensions shown on the sketches (relative to the risers and control valves).

Calculations justifying the above conclusions will be documented in Addendum A to the base stress analysis report (Subsystem 1DD3BC-2", Auxiliary Feedwater, Accession No. 100070, Revision 01, EMD Accession No. 066934).

Should you have any questions, please call me at (312) 269-6504.

Yours truly,

G. Z. Tokarski
Systems Project Engineer

Attachment
Copies:

M. A. Woznicki
A. Reimer
B. E. Lunde
G. T. Kitz
A. W. Szechowycz
D. E. Olson
R. Maduguia

ACC. NO. 122070
REV. 01
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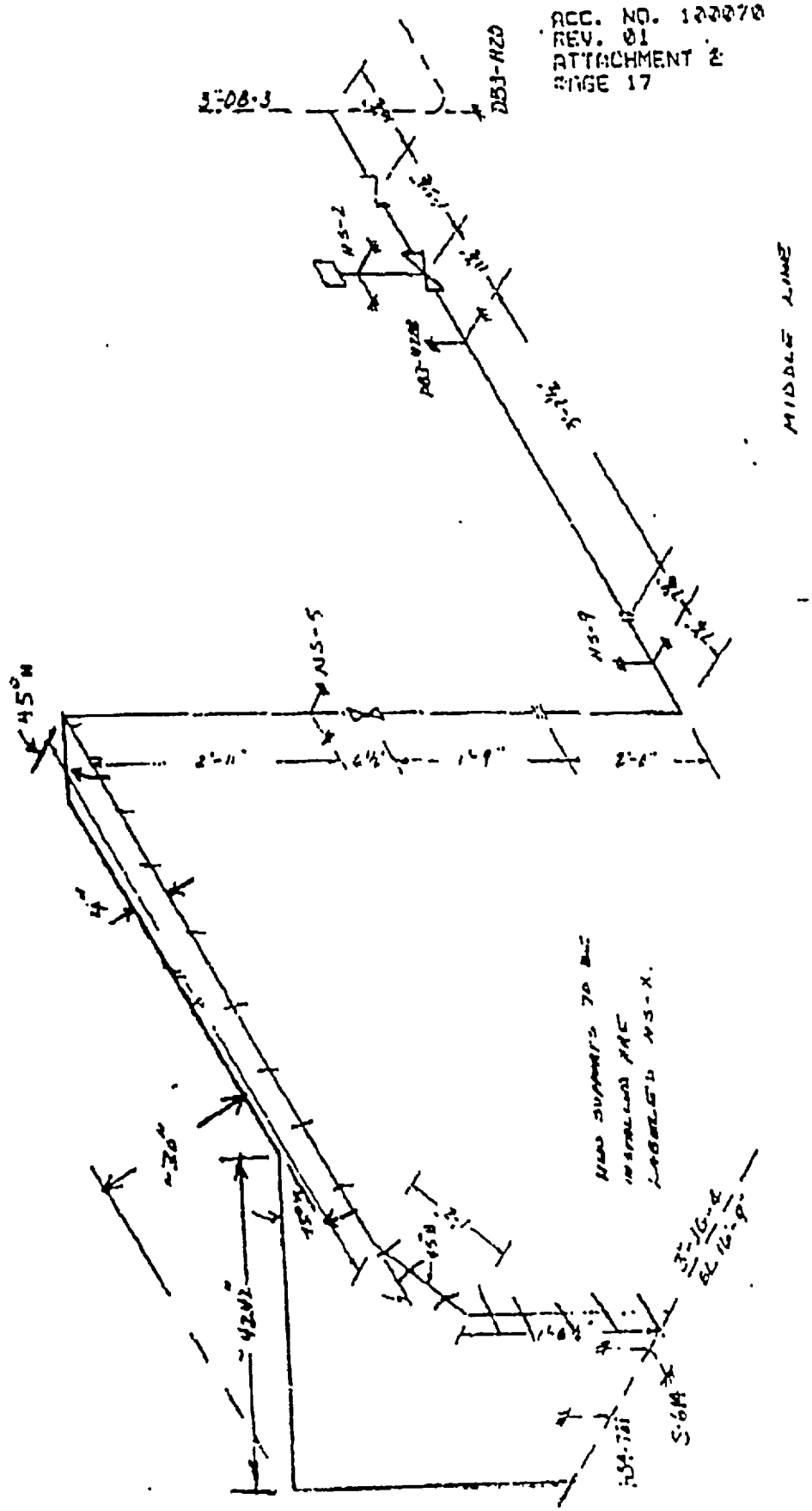
AUXILIARY FEEDWATER RECIRCULATION LINE MODIFICATION
SK-AFW-009/88-099



Wisconsin Electric POWER COMPANY

231 W Michigan, PO Box 2046, Milwaukee, WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-055

Mod # 88-099+B

Responsible Engineer: John A. Schroeder

System: AF

QA Scope [X] Yes [ ] No — Portions of Mod are QA

Equipment: AFW Min-Recirc Line Flow Transmitter Support Stands

Reference Documents: SK-AFW-013/88-099

Problem Description and Proposed Change:

Revision 0 of the drawing for the flow transmitter support stands SK-AFW-013/88-099 shows an 8" length for the pipe and a 4" length from the end of the pipe to the transmitter centerline. With these dimensions the transmitter would be located so close to the wall that access for maintenance/calibrating would not be possible.

Attachments: [ ] Yes [X] No

Initiated By/Date: John A Schroeder

Preliminary Approval By/Date: N/A

Resolution Needed by: Date:

Resolution:

Change the dimensions mentioned above to ≈13" and ≈ 3". This support does not need to be seismic since it supports the non-seismic flow indicating transmitter and there is no safety related seismic equipment below where the transmitter will be mounted.

Attachments: [ ] Yes [X] No

Change Required:

___ Specs: _____

___ Procedures: _____

X Drawings (SK-AFW-013/88-099 to be as-built after the modification is complete.)

___ Other: _____

Design Verification Required: [ ] Yes [X] No

Completed: Date:

MR Addendum Required: [ ] Yes [X] No

Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No

Completed: Date:

Resolution By/Date: John A Schroeder 8/28/91

Responsible Engineer Review/Date: John A Schroeder 8/28/91

QA Review By/Date: [signature] 8/28/91

Group Head Approval/Date: [signature] 8/28/91

Additional Reviews By/Date:

Implementation Completed By/Date:

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Wisconsin Electric POWER COMPANY

231 W Michigan PO Box 2046, Milwaukee, WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-056

Mod # 88-099*B

Responsible Engineer: J. A. Schreiber

System: AFW

QA Scope [X] Yes [ ] No — Portions of Mod are QA

Equipment: P38A and P38B Mini-Recirc Lines

Reference Documents: Drawings SK-AFW-003/88-099 & SK-AFW-009/88-099

Problem Description and Proposed Change:

The locations specified for the new supports for the vertical portion of both P38A and P38B mini-recirc lines are too close to existing HILTI bolts. The separation criteria between HILTI bolts can not be met if the supports DB3A-1003G and DB3A-2003G are installed per the Drawings referenced above.

Attachments: [ ] Yes [X] No

Initiated By/Date:	Preliminary Approval By/Date:	Resolution Needed by: Date:
[signature] 9/5/91	N/A	

Resolution:

The two mentioned supports may be relocated as described in the attached sheet written by Sargent and Lundy engineer Kent Mixer. The relocation of these supports as described in the attached sheet does not adversely impact the piping analysis done for the mod. The piping analysis/report will be updated after mod installation.

Attachments: [X] Yes [ ] No

Change Required:

___ Specs: _____

___ Procedures: _____

X Drawings: SK-AFW-008/88-099, SK-AFW-009/88-099

___ Other: (revise after mod installation)

Design Verification Required: [ ] Yes [X] No
Completed: Date:

MR Addendum Required: [ ] Yes [X] No
Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No
Completed: Date:

Resolution By/Date: [signature] 9/5/91

Responsible Engineer Review/Date: [signature] 9/5/91

QA Review By/Date: [signature] 9-5-91

Group Head Approval/Date: [signature] 9-5-91

Additional Reviews By/Date:

Implementation Completed By/Date:

Form QP 3-4 1
Rev. 1

9-5-91

TO: J. SCHROEDER (WEPCO)

FROM: K. MIXER (S&L)

SUBJECT: RESOLUTION OF ANCHOR LOCATIONS FOR SUPPORTS DB3A-1003G & DB3A-2003G

REFERENCES: 1) P38A AUX. FEEDWATER PUMP ON DWG. SK-AFW-008/88-099

2) P38B AUX. FEEDWATER PUMP ON DWG. SK-AFW-009/88-099

ACCEPTABLE RESOLUTIONS:

1) ALLOW SUPPORT DB3A-1003G TO BE RELOCATED DOWN BETWEEN 2 5/8" & 4 5/8" FROM THE CURRENT DESIGN LOCATION.

2) ALLOW SUPPORT DB3A-2003G TO BE RELOCATED UP BETWEEN 1 5/8" & 3 5/8" FROM THE CURRENT DESIGN LOCATION.

Ken Mixer (S&L)
9-5-91

Wisconsin Electric POWER COMPANY
231 W Michigan PO Box 2046 Milwaukee WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-057

Mod # 88-099*B

Responsible Engineer: J.A. Schroeder

System: Aux Feed Water

Portions of Mod are QA
QA Scope [X] Yes [ ] No

Equipment: AFW Mini Recirc Flow Indicators FIT-04050A &B

Reference Documents:

Problem Description and Proposed Change:
Propose rerouting cable and conduit supplying 120 VAC to the flow indicators to reduce installation time during the 7 day ~~diesel outage~~ LCO SMS. Both indicators will still be supplied from Panel 7L, breaker 25. No additional weight will be added to any existing ~~tray~~ raceway and the new conduit will be seismically mounted to meet the 2 over 1 criteria.

Attachments: [ ] Yes [ ] No

Initiated By/Date: [signature] 9/5/91

Preliminary Approval By/Date:

Resolution Needed by: Date: -

Resolution: Per above, install a junction box and terminal strip in the conduit run supplying the receptacle in the P-38A cubicle. From this junction box power can then be routed to the existing receptacle and to TB 141 (FIT-04050A). This will significantly reduce the amount of new conduit to be installed. The power supply is non-safety related and the seismic concerns are addressed as in the original design.

Attachments: [ ] Yes [X] No

Change Required:

___ Specs: ________

___ Procedures: ________

[X] Drawings: SK-AFW-012/88-099, SK-AFW-011/88-099

___ Other: ________

Design Verification Required: [ ] Yes [X] No
Completed: Date:

MR Addendum Required: [ ] Yes [X] No
Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No
Completed: Date:

Resolution By/Date: [signature] 9/5/91

Responsible Engineer Review/Date: [signature] 9/5/91

QA Review By/Date: [signature] 9-5-91

Group Head Approval/Date: [signature] 9-5-91

Additional Reviews By/Date: NA

Implementation Completed By/Date: [signature] 9/6/91

Form QP 3-4.1
Rev. 1

Wisconsin Electric POWER COMPANY
231 W Michigan PO Box 2046, Milwaukee, WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-058

Mod # 88-099*B

Responsible Engineer: John A. Schroeder

System: AF

QA Scope [X] Yes [ ] No

Equipment: Wiring to AF-4007

Reference Documents: IWP 88-099*B1

Problem Description and Proposed Change:

Using the existing conduit and last junction box prior to valve AF-4007, the wiring for the solenoid valve and limit switches on AF-4007 will not reach their termination points.

Attachments: [ ] Yes [X] No

Initiated By/Date: John A. Schroeder

Preliminary Approval By/Date: N/A

Resolution Needed by: Date: N/A

Resolution:

Shorten the last run of conduit and move the last junction box leading to valve AF-4007 by several feet so the wiring will reach its destination. Mount the components seismically and work per spec. PB-220. Perform during electrical work for IWP 88-099*B1.

Attachments: [ ] Yes [X] No

Change Required:

___ Specs: ______

___ Procedures: ______

___ Drawings: ______

___ Other: ______

Design Verification Required: [ ] Yes [X] No
Completed: Date:

MR Addendum Required: [ ] Yes [X] No
Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No
Completed: Date:

Resolution By/Date: John A. Schroeder

Responsible Engineer Review/Date: John A. Schroeder

QA Review By/Date: Holly Hellecke 9/11/91

Group Head Approval/Date: W B Fromm 9/11/91

Additional Reviews By/Date: N/A

Implementation Completed By/Date.

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Wisconsin Electric POWER COMPANY
231 W Michigan PO Box 2046 Milwaukee WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR #: PB-91-059

Mod #: 88-099*B

Responsible Engineer: John A. Schroeder

System: AF

QA Scope [X] Yes [ ] No

Equipment: P38A Discharge Line Support DB3-H11

Reference Documents: IWP 88-099*B1, Drawing SK-AFW-016/88-099

Problem Description and Proposed Change:
Drawing SK-AFW-016/88-099 requires an 8" embedment on the 1" HILTI bolts. The floor slab is only 10" thick and the design guideline requires a 14" slab for 1" HILTIS. Also rebar was hit at approx 5" deep in each of the 4 holes.

Attachments: [ ] Yes [X] No

Initiated By/Date: John A. Schroeder 9/11/91

Preliminary Approval By/Date: NA

Resolution Needed by: Date: NA

Resolution:
Per A.R. Bayer whom has contacted Sargent & Lundy on the embedment depth, a 6" embedment depth will provide the same allowable capacity as was used in the Sargent & Lundy piping analysis. In addition, the rebar may be cut in the floor slab without adversely affecting its function.

Revise embedment depth for Drawing SK-AFW-016/88-099 to a minimum of 6".

Attachments [ ] Yes [X] No

Change Required:

__ Specs: ________

__ Procedures. ________

X Drawings: SK-AFW-016/88-099 ~~To Be As-Built~~

X Other. Inform NES of ~~HILTI~~ Locations of Cut Rebar After Installation

Design Verification Required [ ] Yes [X] No
Completed Date:

MR Addendum Required. [ ] Yes [X] No
Completed: Date.

10CFR50.59 Evaluation Required: [ ] Yes [X] No
Completed Date:

Resolution By/Date. John A. Schroeder

Responsible Engineer Review/Date: John A. Schroeder

QA Review By/Date: [signature] 9/11/91

Group Head Approval/Date: W.B. Fromm 9/11/91

Additional Reviews By/Date

Implementation Completed By/Date:

Form QP 3-4 1
Rev 1

CHANNEL: FIT- 4050A

SCALING: 0-153 "H_2O 4-20 mA 0-150 GPM

DESCRIPTION: P38A RECIRC FLOW

TOL. = 0.6 GPM

INPUT TRANSMITTER "H_2O	INDICATOR OUTPUT (GPM*) IDEAL	FOUND
0	NO SPEC.	0
33	59.8	4.3
66	84.5	8.7
99	103.5	13.1
133	120.0	17.6

* PERFORM TRANSMITTER AND INDICATOR CALIBRATION BELOW ONLY IF ABOVE INDICATOR IS FOUND OUT OF SPEC.

TOL. ± 0.08 mA	TRANSMITTER OUTPUT (mA)			TOL. ± 0.6 GPM	INDICATOR OUTPUT (GPM)		
INPUT "H_2O	IDEAL	FOUND	LEFT	INPUT (mA)	IDEAL	FOUND	LEFT
0	4.00	4.00	4.00	4.00	0	0	SAF
33	7.97	4.71	7.98	7.97	59.8	59.7	
66	11.94	5.41	11.95	11.94	84.5	84.5	
99	15.91	6.12	15.93	15.91	103.5	103.6	
133	20.00	6.84	20.00	20.00	120.0	120.0	✓

AP Instrument Valves - As Left. First Check JQ Initials Second Check X Initials

TEST EQUIP. USED: TI-206

High Side OPEN
Low Side OPEN
Bypass Closed
Drain NA

NOTE: TWO MAN CHECK OF AS-LEFT VALVE POSITIC NOT REQUIRED IF THIS PROCEDURE IS PERFORMED DURING A REFUELING OUTAGE.
REFUELING: YES ____ NO X

TECHNICIAN	DATE
Jim Quinn	19-13-91

APPROVED BY

I&C SUPERVISOR

POINT BEACH NUCLEAR PLANT

TO: Tom Ropson, Phillips Getchow Co.

FROM: John A. Schroeder, PBNP

SUBJECT: P-38A Mini-Recirc Modification MR 88-099,
Support DB3A-1001G

DATE: 09/11/91

On one of the 1/2" Hilti bolt holes made for support DB3A-1001G there was another 1/2" hole made at 1-1/4 inches from this hole. This distance is within the required minimum separation of 3 bolt diameters (1-1/2 inches). However, since the empty hole is more than 2 bolt diameters away no reduction in HILTI capacity is required per the Nuclear Power Department CEA Design Guideline DG-C-01. Therefore, the 1/2" HILTI mentioned above may be installed in the intended hole at this time. The empty hole which will not be used is to be dry pack grouted and no cure time is necessary before setting the adjacent HILTI bolt.

John A. Schroeder

To: Lee Zingler, Phillips Getchow Co.

From: John A. Schroeder, PBNP

Subject: MR 88-099-B, AFW Mini-Recirc Mod.
Support DB3-H11 (P38A Discharge Line)

The use of the Drillco diamond core bit to core out the 3/4" HILTIS which were embedded approximately 5" was an acceptable method of removing these HILTIS. The minimum embedment of the new 1" HILTIS placed in these holes was 6". Since the depth of the holes from 5" to approx. 8" was made with a HILTI II drill bit, there is no anchorage concern. In addition, a 1/4"ϕ weep hole is to be drilled in the pipe stanchion of support DB3-H11.

John A. Schroeder
9/12/91

NOTE: REFER TO PROCEDURE PBNP 2.1.3, TEMPORARY CHANGES TO PROCEDURES, FOR GUIDANCE ON COMPLETING THIS FORM.

Form Designation (circle one)	
NOTE: Copy original TCRA form prior to completing designation.	
NOTE: See back for routing information.	
Form No	**Use**
1.	Review and Approval
2.	Group Tracking
(3.)	Work/Record
4.	Clerical Tracking
5.	Reg Tracking

PROCEDURE NUMBER/TITLE IT-10 Elect. Driven Auxiliary Feed Pump

Revision Number/Date 22 Sept 6 1991 Date of Change 9/13/91

UNIT: ☐ PB1 ☐ PB2 ☒ PB0

Temporary change valid until Complete this procedure

Temporary change to be one time use only or duration of less than 24 hours? ☒ Yes ☐ No

If no, then temporary change tracking has been put into effect. Initials N/A Date N/A

If the procedure is of a non-signoff type, list affected manual locations on form PBF-0026h and attach.

Permanent procedure change required? ☐ Yes ☒ No

If yes, revision initiated by: Originator N/A Date N/A

REQUIREMENTS

1. The procedure changes listed on this form shall not change the intent of the procedure.
2. Is screening for 10 CFR 50.59 applicability required in accordance with QP 3-3. If YES, Attach applicable portions of Form QP 3-3.1. If NO, explain: Mod 88-099 not complete on P-38A. 50.59 for complete for MR 88-0 previously. Changes are editorial.
3. If this procedure change implements a temporary change/modification to the facility, then a temporary modification form, PBF-2013, shall be completed described in PBNP 2.1.3 and attached.
4. If other groups have procedures which may be affected by these changes, then notification shall be make. Groups/Individuals notified: ______

Step	Change/Reason
4.25	N/A step. Recirc flow meter not installed at this time.
attachment "A" P-38B page 10	N/A reading on flow meter. MR 88-099 not installed yet on P-38B.

Use continuation sheet PBF-0026e for additional description of changes.

FOR INFORMATION ONLY

Changes originated by [signature] Date 9/13/91

APPROVAL PRIOR TO USE

[signature] Date 9/13/91
DSS or Cognizant Group Head*

TJK per telecon Date 9/13/91 Time 2330
Duty & Call Superintendent

*DSS FOR OPERATIONS AND GROUP HEAD FOR OTHER GROUPS' PROCEDURES.

SUBSEQUENT REVIEW AND APPROVAL

Manager's Supervisory Staff Review**

______ MSSM # ______ Date ______ ______ Date ______
For the MSS Manager - PBNP

**IF SERIAL REVIEW AND APPROVAL WAS PERFORMED, FORM PBF-0026d MUST BE ATTACHED.

PBF-0026c
Revision 1 03/04/91

POINT BEACH NUCLEAR PLANT

PROCEDURE USAGE

Record/Field Copy Identification

RECORD

Field Copy Number

RED - Record Copy, BLACK - Field Copy

Procedure IT-10 Elect. Driven Auxiliary Feedwater Pumps

Revision No. 22

Revision Date 9-6-91

Procedure Revision Checked Current and Group Tracking Checked for Temporary Changes:

By [signature] Date 9/14/91

Record Copy Holder/Location U2 Control Operator

FIELD COPY DISTRIBUTION			
Copy No.	Holder/Location	Issue Date	Return D
1	Turbine Bldg A.O.	9/16/91	9/16/9
2			
3			
4			
5			
6			
7			
8			

FOR INFORMATION ONLY

NOTE 1: ANY TEMPORARY CHANGES MADE TO THIS PROCEDURE SHALL BE MADE TO THE REC COPY AND ALL OTHER FIELD COPIES THAT HAVE BEEN ISSUED.

NOTE 2: RETURN ALL FIELD COPIES TO THE HOLDER OF THE RECORD COPY UPON PROCEI COMPLETION.

Revision 22
September 6, 1991

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS (MONTHLY) UNITS 1 AND 2

Date 9/14/91
DSS

1.0 PURPOSE

1.1 The purpose of this test is to perform the following periodic inservice tests as required by Technical Specifications and/or the ASME Boiler and Pressure Vessel Code, Section XI, "Rul for Inservice Inspection of Nuclear Power Plant Components."

1.1.1 Monthly functional test of the electric-driven auxiliary feed pumps as required by Technical Specification 15.4.8.1.a.

1.1.2 Monthly full stroke test of the auxiliary feed pumps service water suction valves, AF-4009 and AF-4016, as required by Technical Specification 15.4.8.1.c.

1.1.3 Monthly full stroke test of the auxiliary feed pump discharge valves, AF-4020, AF-4021, AF-4022 and AF-4023, as required by Technical Specification 15.4.8.1.c

1.1.4 Quarterly partial exercise test of auxiliary feed pump suction check valves, AF-11 and AF-113, as required by ASME Section XI.

1.1.5 Quarterly full stroke test of AF-39 and AF-52, pump suction valves from the CST required by ASME Code Section XI.

1.2 To perform a annual test of the heat transfer capability of the cooling water supply to the auxiliary feedwater pumps by recording bearing temperatures. Reference response to NRC generic letter 89-13.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 If there is any problem in performing this test, immediately notify the duty shift superintende Operation of this equipment is a Technical Specification requirement.

2.2 Do not perform more than one portion of this test at a time.

2.3 This test shall not be performed unless the auxiliary feedwater system capability satisfies th requirements of Technical Specifications for both units. Notify the manager - Operations if test cannot be performed.

2.4 To prevent injecting excessive amounts of service water into the auxiliary feed system, condensate storage tank, or steam generator, when the steam generator is less than 100 p ensure the associated pump discharge pressure control valve and manual recirc isolation i closed when cycling the associated service water supply valve.

2.5 Low suction pressure condition causes a common suction pressure alarm, and a low suct pressure trip with an attendant alarm and a trip-enabled light. This trip is reset by placing control switch for the tripped pump to "PULL-OUT" and then returned to the desired positi The trip-enabled light being extinguished verifies the trip has reset.

FOR INFORMATION ONLY

2.6 Technical Specifications prohibit the testing of a safeguards component if the opposite train's diesel generator is out-of-service.

2.7 If at any time pump suction pressure is less than the NPSH required, this test must be discontinued until problem is corrected.

3 0 INITIAL CONDITIONS — INITIALS

3.1 This test is being done to satisfy:

↘ The normally scheduled call-up. Task sheet No. 6168.

↘ Post-maintenance operability test for P-38A (equip. ID)

MWR No.(s) U-1380
Task Sheet No.(s) 30827

↘ Special test - no numbers

Explain: IWP 88-099 B1

3.2 Auxiliary feed system lined up for critical operation per CL-13E. TG

3.3 Both diesel generators G01 and G02 are in service or the component(s) to be tested are in the same train as the diesel that is out-of-service. TG

3.4 Defeat the blowdown isolation interlock for both units, using the key switch, if required. DW

3.5 Assemble the following portable test instruments and log their ID numbers on Attachment A.

3.5.1 Stop watch (↘)

3.5.2 Vibration monitor (↘)

3.5.3 Temperature indicator (↘) TG

3 6 **Permission to Perform Test**

The conditions required by this test are consistent with required plant conditions including equipment operability. Permission is granted to perform this test.

DSS [signature] TIME 0411 DATE 9/14/91

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

INITIA

4.0 PROCEDURE

NOTE: If the requirements of IT-102 need to be satisfied, follow IT-10 while signing off duplicate steps in IT-102.

NOTE: When performing post-maintenance testing or operability checks when only one train requires testing, omit steps:

4.18 through 4.34 when testing "A" train only
4.1 through 4.17 when testing "B" train only

Train "A"

4.1 Shut P-38A discharge valves, AF-4022 and AF-4023.

NOTE: When performing post-maintenance testing or operability checks of the pumps only, omit Steps 4.2.1 through 4.2.16

4.2 Test AF-4009, P-38A service water suction valve, as follows:

4.2.1 Verify the following valves are shut:

a. SS-176, 1P-29 and P-38A suction sample xconn.

b. SS-178, P-38A and P-38B suction sample xconn.

4.2.2 Place control switch for P-38A in pullout.

4.2.3 Unlock and shut P-38A manual suction valve AF-39.

4.2.4 Unlock and shut P-38A recirc line manual isolation valve AF-27.

4.2.5 Put PC-4012 in manual mode and shut AF-4012.

4.2.6 Open P-38A service water suction upstream drain, AF-38A. When the drain shows clear water, shut AF-38A.

4.2.7 Open AF-4009.

4.2.8 Open P-38A suction drain, AF-38.

4.2.9 When the drain shows clear water, shut AF-4009.

4.2.10 Open and lock P-38A manual suction valve, AF-39.

AF-39 Lock No. 61668 (LO)

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

INITIALS

4.2.11 Flush the service water form the suction header via drain valve AF-38. When the flush is complete, shut AF-38. DG

4.2.12 Fill and vent P-38A suction piping

a. Verify AF-35B, P-38A suction sample valve OPEN. DG

b. Crack open SS-173, P-38A suction sample vent DG

c. When all the air is vented from the suction line then shut SS-173, suction sample vent. DG

4.2.13 Open and lock P-38A manual recirc isolation valve AF-27.

AF-27 Lock No. 6181 6 (LO) DG

4.2.14 Place the control switch for P-38A in auto. DW

4.2.15 Verify LO suction pressure trip for P-38A has reset. DW

4.2.16 Put PC-4012 in the auto mode and set for 1200 psig. DW

4.3 Check P-38A pump bearing oil level between the red lines on the glass.
Inboard DW
Outboard DW

4.4 Valve in pump suction pressure gauge PI-4010A. Record suction pressure on Attachment A. DW

4.5 Start P-38A. Time Start 0437 DW

4.6 Verify P-38A suction pressure is ≥4.8 psig. DW

4.7 Check mini-recirculation valve AF-4007 open. DW

4.8 Check mini-recirculation flow ≥70 gpm on FI-4050A and record on Attachment A. DW

4.9 Check the packing glands for excessive leakage or overheating. DW

4.10 Check pump and motor for unusual noise or overheating. DW

4.11 After a five-minute run time, record the data on Attachment A. See Note 2 for pump run time requirements when taking bearing temperature readings. DW

4.12 Isolate and vent pump suction pressure gauge PI-4010A. DW

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS (MONTHLY) UNITS 1 AND 2

INITIALS

4.13 Secure P-38A and observe its coastdown behavior for unusual noises, vibrations, or other abnormal conditions. Note results on Attachment A.
Time stop 0523 _____

NOTE: If Unit 1 is in a cold shutdown or refueling condition AF-4023 should remain shut. If Unit 2 is in a cold shutdown or refueling condition AF-4022 should remain shut.

4.14 Open AF-4022. (This step is N/A if note above applies.) _____

4.15 Open AF-4023. (This step is N/A if note above applies.) _____

4.16 Second independent operator perform the following valve lineup verification for Train "A".

		Position	
AF-39	P-38A suction isolation	LO	_____
AF-27	P-38A recirc isolation	LO	_____
AF-4012	P-38A discharge PCV controller	(Auto - 1200 psig)	_____
AF-4022	P-38A discharge to Unit 2 "A" steam generator	0 *	_____
AF-4023	P-38A discharge to Unit 1 "A" steam generator	0 *	_____
AF-4007	P-38A mini-recirc control valve	UG/LH	_____
	P-38A control switch	Auto	_____

*The pump discharge valves for a unit in a cold shutdown or a refueling condition should remain shut.

4.17 Check train "A" operability by comparing the test data with the limits in the Operations Standing Order. _____

Train "B"

4.18 Shut P-38B discharge valves AF-4020 and AF-4021. _____

NOTE: When performing post-maintenance testing or operability checks of the pumps only, omit Steps 4.19.1 through 4.19.16.

4.19 Test AF-4016, service water suction for P-38B, as follows:

4.19.1 Verify the following valves are shut:

a. SS-177, 2P-29 and P-38B suction sample xconn. _____

b. SS-178, P-38A and P-38B suction sample xconn. _____

4.19.2 Place the control switch for P-38B in pullout. _____

4.19.3 Unlock and shut manual suction valve AF-52. _____

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

		INIT
4.19.4	Unlock and shut pump recirc line isolation valve AF-40.	
4.19.5	Put PC-4019 in the manual mode and shut AF-4019.	
4.19.6	Open P-38B service water suction upstream drain, AF-51A. When the drain shows clear water, shut AF-51A.	
4.19.7	Open AF-4016.	
4.19.8	Open P-38B suction drain AF-51.	
4.19.9	When the drain shows clear water, shut AF-4016.	
4.19.10	Open and lock the manual suction valve AF-52.	
	AF-52 Lock No. 61787 (LO)	
4.19.11	Flush the service water from the suction header via drain valve AF-51. When the flush is complete, shut AF-51.	
4.19.12	Fill and vent P-38B suction piping.	
	a. Verify AF-48B, P-38B suction sample valve open.	
	b. Crack open SS-175, P-38B suction sample vent.	
	c. When all the air is vented from the suction line then shut SS-175, P-38B suction sample vent.	
4.19.13	Open and lock the manual recirc isolation valve AF-40.	
	AF-40 Lock No. 61125 (LO)	
4.19.14	Place the control switch for P-38B in the auto position.	
4.19.15	Verify LO suction pressure trip for P-38B has reset.	
4.19.16	Place PC-4019 in the auto mode and set for 1200 psig.	
4.20	Check P-38B pump bearing oil level between the red line on the glass. Inboard	
	Outboard	
4.21	Valve in pump suction pressure gauge PI-4017A. Record suction pressure on Attachment A. 15.3	
4.22	Start P-38B. Time Start 0538	

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS (MONTHLY) UNITS 1 AND 2

INITIALS

4.23 Verify P-38B suction pressure is ≥4.8 psig. DW

4.24 Check mini-recirculation valve AF-4014 open. DW

4.25 Check mini-recirculation flow ≥70 gpm on FI-4050B and record on Attachment A. N/A DG

4.26 Check packing glands for excessive leakage or overheating. DW

4.27 Check the pump and motor for unusual noise or overheating. DW

4.28 After a five-minute run time, record the data on Attachment A. See Note 2 for pump run time when taking bearing temperature readings. DW

4.29 Isolate and vent P-38B suction pressure gauge PI-4017A. DW

4.30 Secure P-38B and observe its coastdown behavior for unusual noises, vibrations, or any other abnormal conditions. Note results in Attachment A.

Time Stop 0549 DW

NOTE: If Unit 1 is in a cold shutdown or refueling condition AF-4021 should remain shut. If Unit 2 is in a cold shutdown or refueling condition, AF-4020 should remain shut.

4.31 Open AF-4020. (This step is N/A if note above applies.) DW

4.32 Open AF-4021. (This step is N/A if note above applies.) DW

4.33 Second independent operator perform the following valve lineup verification for Train "B".

		Position	
AF-52	P-38B suction isolation	LO	
AF-40	P-38B recirc isolation	LO	
AF-4019	P-38B discharge PCV controller	(Auto - 1200 psig)	
AF-4020	P-38B discharge to Unit 2 "B" steam generator	0 *	
AF-4021	P-38B discharge to Unit 1 "B" steam generator	0 *	
AF-4014	P-38B mini-recirc control valve	UG/LH	
	P-38B control switch	Auto	

*The pump discharge valves for a unit in a cold shutdown or a refueling condition should remain shut.

4.34 Check Train "B" operability by comparing the test data with the limits in the Operations Standing Order. DW

INFORMATION ONLY

INITIA

4.35 Enable the blowdown isolation interlock for both units by removing the interlock defeat keys, if required.

5.0 ANALYSIS

TO BE COMPLETED WITHIN 96 HOURS BY MANAGER - OPERATIONS OR HIS REPRESENTATIVE.

5.1 Comparisons with allowable ranges of test values and analysis of deviations complete. ____

5.2 Any requirements for corrective action? ____

Yes _____ No _____

(If yes, give details in the remarks section.)

5.3 Data analyzed by _____

Time and date _____

Remarks:

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS (MONTHLY) UNITS 1 AND 2

ATTACHMENT A

P-38A - "A" MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP

PARAMETER			INSTRUMENT	UNITS	READINGS	
Pump Discharge Pressure			PI-4012	psig	1300	
Pump Suction Pressure before Test			PI-4010A	psig	14.8	
Pump Suction Pressure During Test			PI-4010A	psig	15.6	
Pump Differential Pressure			Note 4	psid	1284.4	
Pump Vibration	Inboard Bearing	Vertical C	Note 1,6	mils/ips	mils .152	ips .0586
		Horizontal D	Note 1,6	mils/ips	mils .2515	ips .116
		Axial E	Note 1,6	mils/ips	mils .11	ips .0393
	Outboard Bearing	Vertical A	Note 1,6	mils/ips	mils .1956	ips .0805
		Horizontal B	Note 1,6	mils/ips	mils .2597	ips .1226
Bearing Temperature (Note 2)	Pump	Inboard	1 TR-2000	°F	83.5	
		Outboard	1 TR-2000	°F	82.7	
	Motor	Inboard F	Notes 1, 6	°F	90	
		Outboard G	Notes 1, 6	°F	90	
	Ambient Air Temperature		Notes 1, 6	°F	87	
Condensate Storage Tank Temperature (Note 3)			TI-4045 (TI-4046)	°F	70	
Pump Mini-Recirculation Flow			FI-4050A	gpm	86	
Pump Coastdown Behavior Check (✓) If OK			N/A	N/A	S	

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

ATTACHMENT A

P-38B - "B" MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP

PARAMETER			INSTRUMENT	UNITS	READINGS	
Pump Discharge Pressure			PI-4019	psig	1340	
Pump Suction Pressure Before Test			PI-4017A	psig	15.3	
Pump Suction Pressure During Test			PI-4017A	psig	15.3	
Pump Differential Pressure			Note 4	psid	1324.7	
Pump Vibration	Inboard Bearing	Vertical C	Note 1, 6	mils/ips	.1298 mils	.0621 ips
		Horizontal D	Note 1, 6	mils/ips	.2174 mils	.0928 ips
		Axial E	Note 1, 6	mils/ips	.1037 mils	.0388 ips
	Outboard Bearing	Vertical A	Note 1, 6	mils/ips	.2781 mils	.0782 ips
		Horizontal B	Note 1, 6	mils/ips	.5888 mils	.1533 ips
Bearing Temperature (Note 2)	Pump	Inboard	1 TR-2000	°F	NA QW	
		Outboard	1 TR-2000	°F	NA QW	
	Motor	Inboard F	Note 1, 6	°F	NA QW	
		Outboard G	Note 1, 6	°F	NA QW	
	Ambient Air Temperature		Note 1, 5	°F	NA QW	
Condensate Storage Tank Temperature (Note 3)			TI-4045 TI-4046	°F	70	
Pump Mini-Recirculation Flow			FI-4050B	gpm	N/A TG 9/11/91	
Pump Coastdown Behavior Check (✓) If OK			N/A	N/A	S	

PARAMETER	TEST INSTRUMENT ID
Vibration	1CTI-212
Bearing Temperature	MCDP-001
Ambient Air Temperature	MCDP-001
Stopwatch	

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

NOTE 1: *Log the identification number of the portable instrument being used.*

NOTE 2: *Readings taken only during the first run of January, after pump maintenance, or when establishing new reference values. These readings will be taken after bearing temperat have stabilized. "Stabilization" is achieved when:*

a. *Three consecutive temperature readings have been taken at ten-minute inter*

and

b. *Each reading is within 3 percent of the other two.*

NOTE 3: *On the data sheet, circle the appropriate temperature indicator. If tanks are cross-conn use the average of both tanks.*

TI-4045	*"A" Tank*
TI-4046	*"B" Tank*

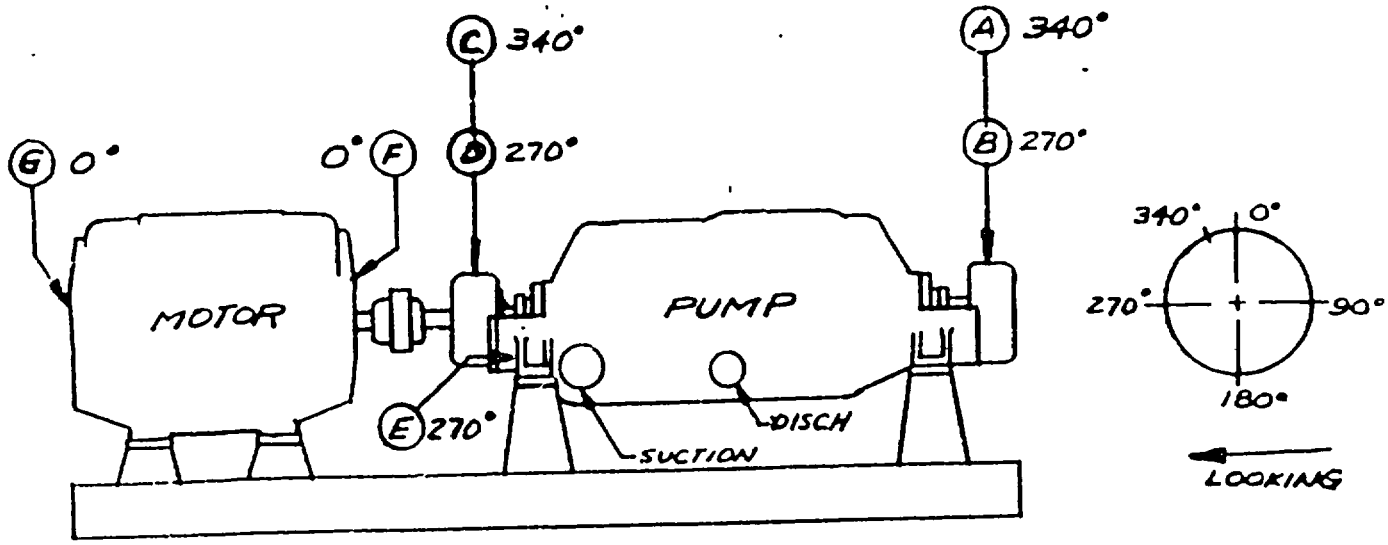
NOTE 4: *Differential pressure = pump discharge pressure - pump suction pressure during test.*

NOTE 5: *Ambient air temperature is taken approximately one foot above the pump inboard bearin*

NOTE 6: *Vibration reading will be taken at locations A, B, C, D and E, as shown on Figure 1. Temperature readings will be taken at locations F and G, as shown on Figure 1.*

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2



ELECTRIC AUXILIARY FEED PUMP

AUXILIARY FEEDWATER SYSTEM

DATA SHEET 1

Scaling: 0-200 "H_2O
0-200 gpm

Channel: DPIS-4007

Description: P38A, AFP Recirculation Flow Controller

Indicator		Tolerance: ±2 gpm	
Input "H_2O	Output (gpm)		
	Ideal	Found	Left
0	0		
50	100		
100	141.4		
150	173		
200	200		

Switch		Tolerance: ±2 gpm	
Switch Condition	Setpoint (gpm)		
	Ideal	Found	Left
Open↑	~~3095~~	Changed	95
Close↓	~~2875~~	↓	75

Per approved setpoint change (MR# 88-099)

NOTE: Notify control room that recirc valve may not operate when required due to calibration in progress.

Test Equipment Used: N/A

AF Instrument Valves - As Left

First Check _____ Initials

Second Check _____ Initials

High Side _____
Low Side _____
Bypass _____
Drain _____

Adjusts Diff. →
Adjusts Setpoint ↑

Performed by Jim Quinn Technician Date. 9-13-91

Reviewed by _____ I&C Supervisor

№ 287479

PLANT STOREROOM REQUISITION TASK SHEET NO | WR 913661

PM

RESP.	DES.	PRIMARY ACCT.	SUB - ACCT.	PROJECT NO.
				X X

DATE REQUESTED 11/11/17

DATE REQUIRED / /

WHERE USED Ch 1 Galen · 88-099

UNIT NO. ______

CHECK BOX ☐ STAGING REQUIRED

QTY.	UNIT	LOT NUMBER	KEY WORD / DESCRIPTION	BIN LOC.	(STOREROOM USE ONLY) ORDERED	REC	STAGED QTY.	STAGED LOC.	QTY. DISBURSED	QTY. RETURNED	CHARGE OUT NO
		2-76-29	Part 11 BoH27 (SA6679)								

INSTRUCTIONS COMMENTS ______

REQUESTED BY ______ FOR ______ APPROVED BY ______ FILLED BY ______

POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

*Unit PBO *Piping class DB-3
*System / Component AF / P38A Recirc Line
*Design Press 1440 *Design Temp 100
Test Press
TARGET TEST PRESS 2160 TEST TEMP AMB
*MWR/SMP/IWP IWP 88-099*B1
*Other Reference

*Test Type: Hydro X
Pneum
Other (Specify)

*Reference Code: ASME III
B31.1.0 X
NFPA

Components/equipment within test boundary have been reviewed for pressure/temperature limits JAS (Initials)

*Test Variance or Special Analysis/Consideration Required: YES / (NO)

Description:

Resolution/Comments:

ISI Engineer Date

*Pretest Director John A. Schroeder Date 8/24/91

INSTRUMENTATION

Temperature Device ID: N/A Test Press Gage ID: OTE #11
Test Press Gage Range: 0-5000 (Range shall be 1.5-4.0 times test press)

*Ops Coordinator Review [signature] Date 9-12-91

PRETEST CALIBRATION

Cal. Equip ID: TI-131	Ideal	As-Left
I&C Technician: Mike Ducker	2100	2100
	2150	2150
Date: 9-13-91	2200	2200

POST-TEST CALIBRATION

Cal. Equip. ID: TI-131	As-Found
I&C Technician: B. Noe	2100
	2150
Date: 9-16-91	2200

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

Target Test Pressure 2160
*System Temperature AMBIENT
*Test Pressure ~~2060~~ 2200 ~~/ [illegible]~~
Maximum Pressure ~~2210~~ #1 2200
Minimum Pressure 2060 /

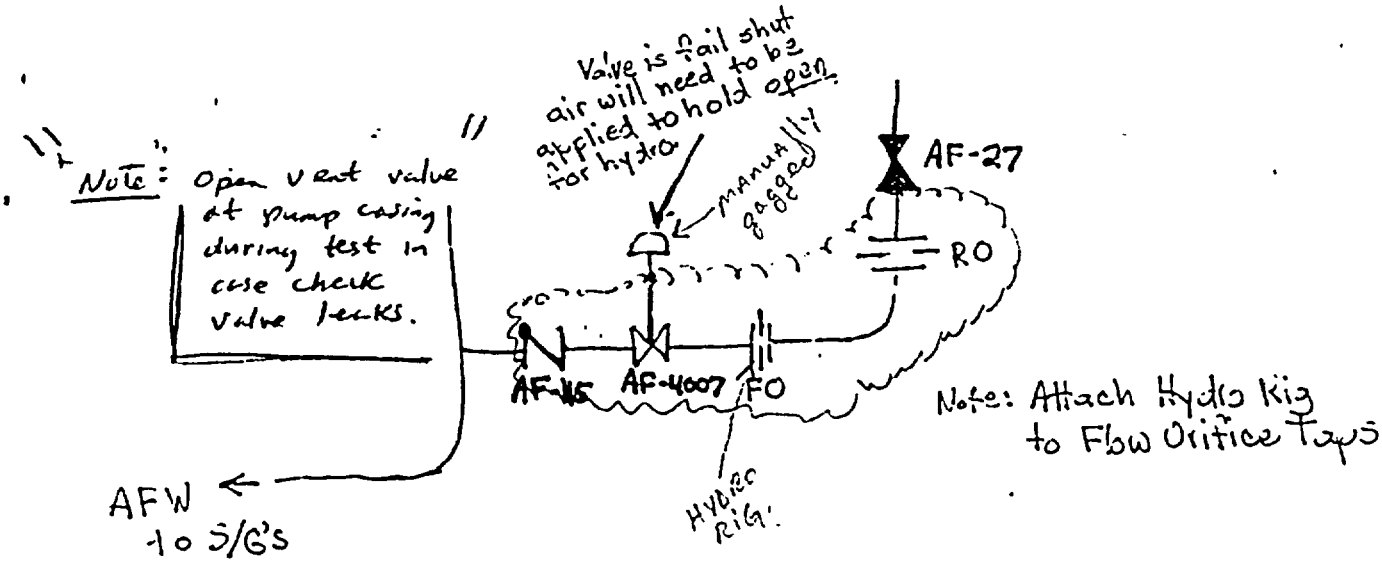
Tolerance + 50 psig - 100 psig
*At Test Pressure 1820 Time
Hold Time Complete 1830 Time
*Test Complete 1831 Time
Test Operator S. PHILLIPS Date 9-13-91

CAUTION: Independent Verification of Restoration per PBNP 3.1.1 may be needed.

Test Director [signature] Date 9-13-91
Ops Coordinator Review [signature] Date 9-17-91
QAC Review [signature] Date 10/10/91
Comments:

* - Indicates data entry for initial service leak test.

PBF 0012
(06-90)


Note: Open vent valve at pump casing during test in case check valve leaks.
Valve is fail shut air will need to be applied to hold open.
manually gagged
AF-27
RO
AF-4007
FO
Note: Attach Hydro Rig to Flow Orifice Taps
AFW
to S/G's
Hydro Rig

POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

•Unit PB-0 •Piping class DB-3
•System / Component AF / P38A Mini Recirc Piping
•Design Press 1440 •Design Temp 100
Test Press
TARGET TEST PRESS TEST TEMP AMB
•MWR/SMP/IWP IWP 88-099*B1
•Other Reference

•Test Type: Hydro
Pneum
Other (Specify) X Initial Service Leak Test

•Reference Code: ASME III
B31.1.0 X
NFPA

Components/equipment within test boundary have been reviewed for pressure/temperature limits JAS (Initials)

•Test Variance or Special Analysis/Consideration Required: (YES) NO

Description: Impractical to Hydro Pump (See Reverse Side).

Resolution/Comments: Perform Surface Exam on all New Welds and an initial service leak test. ~~Surface~~ This section can not be isolated.

ISI Engineer James F. Kollway for GR Sherwood Date 6 Sept. 1991

•Pretest Director John A. Schroeder Date 8/24/91

INSTRUMENTATION

Temperature Device ID:
Test Press Gage Range:
Test Press Gage ID:
(Range shall be 1.5-4.0 times test press)

•Ops Coordinator Review [signature] Date 9-12-91

PRETEST CALIBRATION

Cal. Equip ID:	Ideal	As-Left
I&C Technician:		
Date:		

POST-TEST CALIBRATION

Cal. Equip. ID:	As-Found
I&C Technician:	
Date:	

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

Target Test Pressure
•System Temperature 81
•Test Pressure 1300 /
Maximum Pressure /
Minimum Pressure /

Tolerance + psig - psig
•At Test Pressure 0455 Time
Hold Time Complete * Time
•Test Complete 0459 Time
Test Operator [signature] Date 9/14/91

CAUTION: Independent Verification of Restoration per PBNP 3.1.1 may be needed.

Test Director [signature] Date 9/14/91
Ops Coordinator Review [signature] Date 9-16-91
QAC Review [signature] Date 10/10/91
Comments: * Test performed IAW IT-10 / JJK

• - Indicates data entry for initial service leak test.

PBI 0012

POINT BEACH NUCLEAR PLANT

HYDROSTATIC/PNEUMATIC TEST CALCULATION SHEET

Piping Class/System/Component DB-2 / AF / P38A

NOTE: The letters "A" through "P" used in calculations are previous step designators. Use the value obtained in the indicated step.

A. *Design Pressure = Pd	1440 psig
B. *Design Temperature = Td	100 deg F
Z = multiplier determined from Table 2 of PBNP 3.2.5	Z = 1.5
C. *Test Pressure = Z x A	2160 psig
D. *Test Gage Range = 1.5 x C	3240 psig
= 4.0 x C	8640 psig
E. *Temporary Relief Valve Setpoint = 1.10 x C	2376 psig
F. Lowest System Elevation	~10' ft
G. Highest System Elevation	~15' ft
H. Test Gage Elevation	10' ft
I. Elevation Correction = 0.43 x (G − H)	2.15 psig
J. Adjusted Test Pressure = C + I	2162 psig
K. Additional Low Point Pressure = 0.43 x (H − F)	0 psig
L. Low Point Pressure = J + K (for gage above low point) If K is less than zero, enter zero for L.	N/A psig
M. Maximum Low Point Pressure = 1.06 x C If L > M, notify the ISI Engineer	2290 psig
N. System Insulated (Circle one)	YES / (NO)
O. *Pressure Hold Time (See Table 2 for hold times)	10 (min)/~~hr~~
P. *Rounded Adjusted Test Pressure, Step 8.1.8 (Enter on EQR-42 as Target Test Pressure)	2160 psig

Comments / Notes: _____

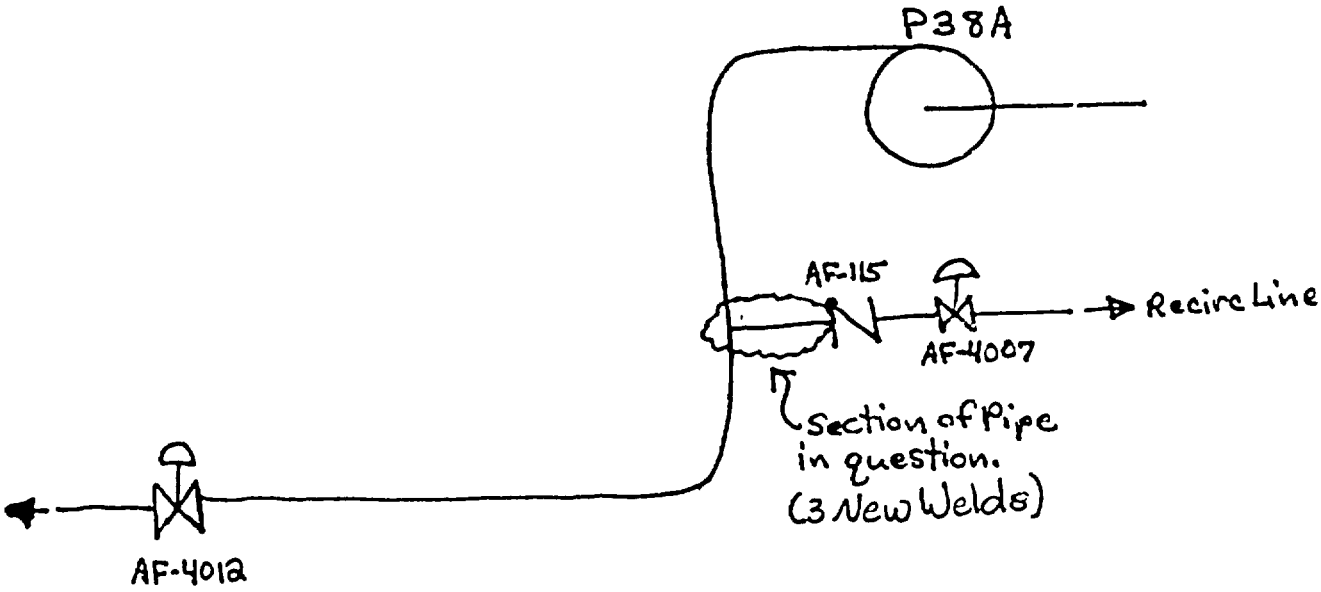
Performed by: Mike Pedersen Date 7-15-91

Reviewed by: Jack A. Schroeder Date 8/24/91

* = applicable to pneumatic tests.

Test Variance Description (cont.): The hydro was not practical because the nearest flange is on the suction side of the pump (which has a much lower design pressure) and its ability to withstand normal hydro pressures was questionable.

ASME Sect. XI was also checked for guidance on pressure testing of similar class components. Per Sect. XI, Wisconsin Electric would be able to hydro the new pipe using the suction side design pressure, because the new pipe is upstream of the first off discharge isolation valve. This would result in a hydro pressure of ≤ 150 psig. In actuality then, the inservice test will produce pressure ~ 10 times greater than the section XI hydro pressure.



POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

•Unit PBO •Piping class JG-4
•System / Component AFW Recirc / P38A
•Design Press 450 •Design Temp 100
Test Press 75
TARGET TEST PRESS 80 TEST TEMP AMB
•MWR/SMP/IWP IWP 88-099B
•Other Reference

•Test Type: Hydro X
Pneum
Other (Specify)

•Reference Code: ASME III
B31.1.0 X
NFPA

Components/equipment within test boundary have been reviewed for pressure/temperature limits JAS (Initials)

•Test Variance or Special Analysis/Consideration Required: YES (NO)

Description:

Resolution/Comments:

ISI Engineer Date

•Pretest Director [signature] Date 8/24/91

INSTRUMENTATION

Temperature Device ID: Test Press Gage ID: OTG-13
Test Press Gage Range: (Range shall be 1.5-4.0 times test press)

•Ops Coordinator Review R J Vargas / [initials] Date 9-11-91

PRETEST CALIBRATION

Cal. Equip ID: TI-9	Ideal	As-Left
I&C Technician: G. Schles	70	70
	75	75
Date: 9-11-91	80	80

POST-TEST CALIBRATION

Cal. Equip. ID: TI-9	As-Found
I&C Technician: [signature]	70
	75
Date: 9-12-91	80

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

Target Test Pressure 80
•System Temperature 69°F
•Test Pressure 80 / 80
Maximum Pressure 80.5 ~~79.5~~ / ~~80.5~~
Minimum Pressure 79.5 /

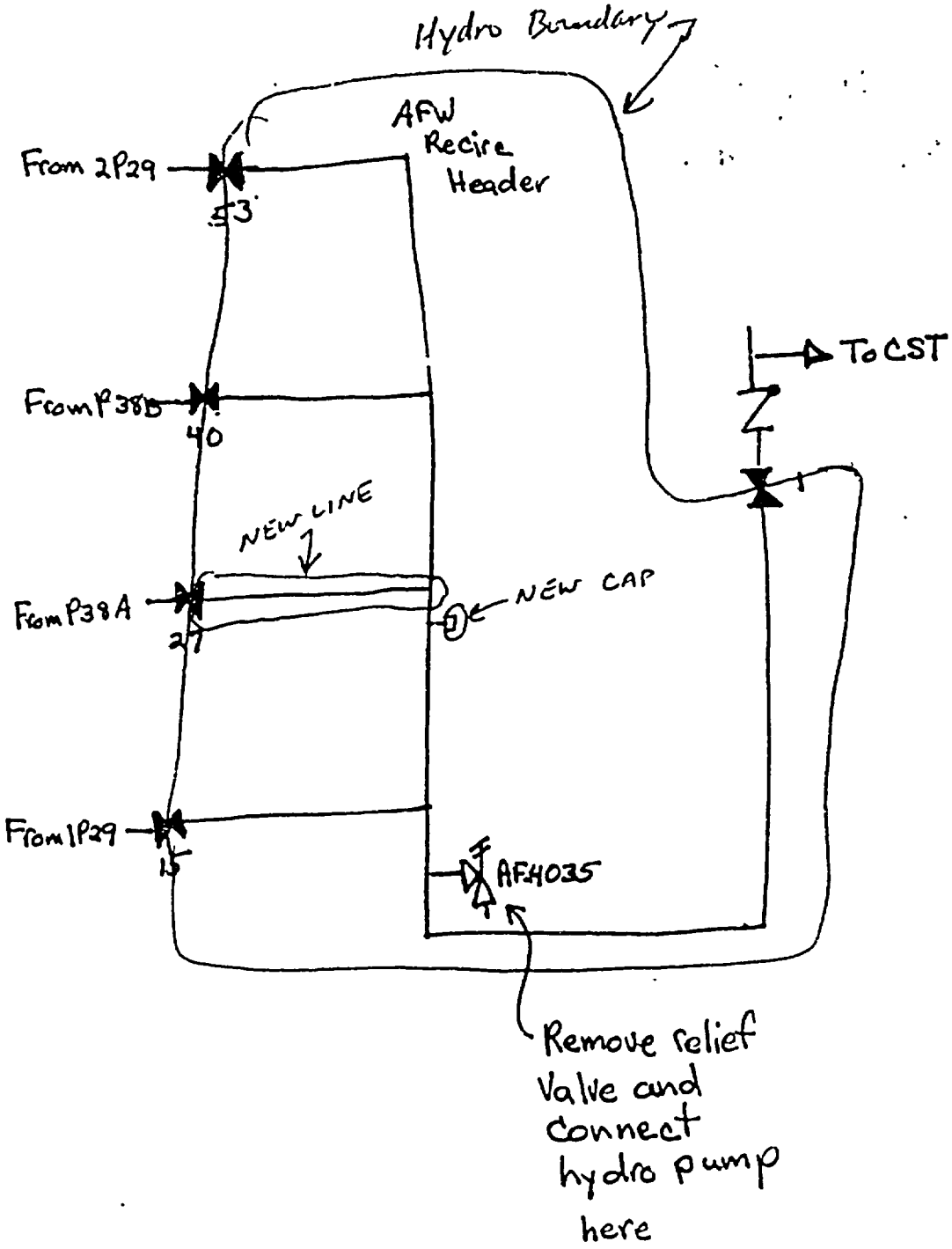
Tolerance + 2 psig - 4 psig
•At Test Pressure 2115 Time
Hold Time Complete 2125 Time
•Test Complete [signature] / 2140 Time
Test Operator [signature] Date 9-11-91

CAUTION: Independent Verification of Restoration per PBNP 3.1.1 may be needed.

Test Director [signature] Date 9/11/91
Ops Coordinator Review [signature] Date 9-16-91
QAC Review [signature] Date 10/10/91
Comments:

• - Indicates data entry for initial service leak test.

PBF 0012


Hydro Boundary
AFW
Recirc
Header
From 2P29
3
To CST
From P38B
40
NEW LINE
From P38A
NEW CAP
27
From 1P29
15
AFH035
Remove relief
Valve and
Connect
hydro pump
here

POINT BEACH NUCLEAR PLANT

HYDROSTATIC/PNEUMATIC TEST CALCULATION SHEET

Piping Class/System/Component JG-4 / AFW Recirc / P38A

NOTE: The letters "A" through "P" used in calculations are previous step designators. Use the value obtained in the indicated step.

A.	*Design Pressure = Pd	50 psig
B.	*Design Temperature = Td	100 deg F
	Z = multiplier determined from Table 2 of PBNP 3.2.5	Z = 1.5
C.	*Test Pressure = Z x A	75 psig
D.	*Test Gage Range = 1.5 x C	113 psig
	= 4.0 x C	300 psig
E.	*Temporary Relief Valve Setpoint = 1.10 x C	83 psig
F.	Lowest System Elevation	10 ft
G.	Highest System Elevation Highest New Weld	20 ft
H.	Test Gage Elevation	10 ft
I.	Elevation Correction = 0.43 x (G − H)	4.3 psig
J.	Adjusted Test Pressure = C + I	79.3 psig
K.	Additional Low Point Pressure = 0.43 x (H − F)	0 psig
L.	Low Point Pressure = J + K (for gage above low point) If K is less than zero, enter zero for L.	79.3 psig
M.	Maximum Low Point Pressure = 1.06 x C If L > M, notify the ISI Engineer	79.5 psig
N.	System Insulated (Circle one)	YES / (NO)
O.	*Pressure Hold Time (See Table 2 for hold times)	10 min/hr
P.	*Rounded Adjusted Test Pressure, Step 8.1.8 (Enter on EQR-42 as Target Test Pressure)	80 psig

Comments / Notes: _____

Performed by: Julie Pederson Date 8-5-91

Reviewed by: [signature] Date 8/24/91

* = applicable to pneumatic tests.

EQR-44
(9-88)

POINT BEACH NUCLEAR PLANT

PROCEDURE USAGE

Record/Field Copy Identification

RECORD

Field Copy Number

RED - Record Copy, BLACK - Field Copy

Procedure IWP 88-099*B2, P38B Mini-Recirc Line Modification

Revision No. 0

Revision Date 9-6-91

Procedure Revision Checked Current and Group Tracking Checked for Temporary Changes:

By John A. Schroeder Date 9/11/91

Record Copy Holder/Location John A. Schroeder / PBNP

FIELD COPY DISTRIBUTION			
Copy No.	Holder/Location	Issue Date	Return Date
1	Phillips Getchow / PBNP		
2	I & C / PBNP		
3	Pieper Lusin, R.W. King / PBNP		
4			
5			
6			
7			
8			

NOTE 1: ANY TEMPORARY CHANGES MADE TO THIS PROCEDURE SHALL BE MADE TO THE RECORD COPY AND ALL OTHER FIELD COPIES THAT HAVE BEEN ISSUED.

NOTE 2: RETURN ALL FIELD COPIES TO THE HOLDER OF THE RECORD COPY UPON PROCEDURE COMPLETION.

IWP NUMBER: 88-099*B-2

Page 1 of

INSTALLATION WORK PLAN

PBNP MINOR PROCEDURE ☒

MAINTENANCE WORK REQUEST WORK PLAN ☐

Check As Applicable

Prefabricate Piping: 913664
Piping Installation: 913662
Electrical Installation: 913705

FOR MODIFICATION # 88-099*B, MWR # I&C: 913708
Install Handwheel Conversion Kit and New Spring in Control Valve: 915015

INSTALLATION WORK PLAN TITLE

Increase The Flow Capacity of AFW Pump P-38B Mini-Recirc Line

UNIT PBO ☒ QA-SCOPE ☐ NON QA-SCOPE

Originator [signature] Date 8/24/91

Reviewer [signature] Date 9/3/91

Design Group Superintendent [signature] Date 9/5/91

Quality Engineer [signature] Date 9/4/91
9/5/91 9.5.91

Installation Group Superintendent [signature] Date

Superintendent Operations [signature] Date 9-5-91

NOTE: Changes to this work plan must be done with the concurrence of the responsible engineer and the installation supervisor, or as delineated within the IWP.

Form CE [illegible]
Revision

FOR I&C USE ONLY
SHEET NO _____
COMPLETED _____

PERMANENT PROCEDURE AND PROCEDURE REVISION REVIEW & APPROVAL

PROCEDURE IWP 88-099*B2, MINOR, P-38B AFW PUMP

Revision Number 0

Date _____

DESCRIBE CHANGES

Step Change/Reason MSS Summary Review
This IWP installs modification 88-099*B for the P-38B AFW pump. The modification increases the capacity of this pump's mini-recirc line and adds a flow indicating transmitter to the line.

J. Crowley

Use PBF-0026c for additional description of changes.

YES ☒ NO ☐ IS SCREENING FOR 10 CFR 50.59 APPLICABILITY REQUIRED IN ACCORDANCE WITH QP 3-3. IF YES, ATTACH APPLICABLE PORTIONS OF FORM QP 3-3.1.
IF NO, EXPLAIN: 50.59 Evaluation was performed for the modification, SER 91-025-02

☐ ☒ CHECK IF THIS PROCEDURE CHANGE IMPLEMENTS A TEMPORARY CHANGE/ MODIFICATION TO THE FACILITY AND ATTACH FORM PBF-2013 COMPLETED AS DESCRIBED IN PBNP 2.1.1.

☒ ☐ CHECK IF CLASSROOM TRAINING IS NECESSARY: AFTER ISSUE ☒ BEFORE ISSUE ☐
IF YES, BRIEFLY DESCRIBE TRAINING DESIRED ON PBF-0026c AND ATTACH TO THIS FORM.
Training will be completed as part of mod closeout.

☐ ☒ CHECK IF THIS REVISION CONSTITUTES A BIENNIAL REVIEW AS DESCRIBED IN PBNP 2.1.2.

Jack T Schroeder Date 9/5/91
Originator

Date 9/5/91
Review (Approval) Management person from cognizant group

APPROVALS

MAJOR Initial Issue All Revisions Cancellations MINOR, Rev. 0 Cancellations	Manager's Supervisory Staff Review** Date 9-5-91 (For the Supervisory Staff) **Form PBF-0026d must accompany this sheet if serial review and approval was conducted.	MSSM 91-15 Date 9/5/91 Manager - PBNP Approval
Minor and Special Process	Operating/Other Procedures Date Cognizant Group Head	SMPs/RMPs (both signatures required) Date Superintendent - Operations Date Cognizant Group Head
NNSR Manager Approval required for QPs	Date Group Head/Manager Approval Date Other Approval (If Required)	Date Manager - PBNP Approval (If Required) Date Other Approval (If Required)

See other side for summary of PBNP 2.1.1 approval requirements.

POINT BEACH NUCLEAR PLANT

Page 1 of —

MINOR/SPECIAL PROCESS TEMPORARY CHANGE REVIEW AND APPROVAL

NOTE: REFER TO PROCEDURE PBNP 2.1.3, TEMPORARY CHANGES TO PROCEDURES, FOR GUIDANCE ON COMPLETING THIS FORM.

PROCEDURE NUMBER/TITLE IWP 88-094-B2, P38B Mini-Recirc Line Modification

Revision Number/Date Rev. 0, 9/6/91 Date of Change 9/11/91

UNIT: ☐ PB1 ☐ PB2 ☒ PB0

Temporary change valid until Procedure Completed

Temporary change to be one time use only or duration of less than 24 hours? ☒ Yes ☐ No

If no, then temporary change tracking has been put into effect. Initials ____ Date ____

If the procedure is of a non-signoff type, list affected manual locations on form PBF-0026h and attach.

Form Designation/Distribution
(Circle one)

1. Sign off - not used
   Non-Sign off - Group Head with procedure
2. Group tracking with procedure copy
3. Sign off - original procedure in use
   Non-Sign off - procedure copy into manuals
4. Senior Clerk, Records Management w/o procedure

REQUIREMENTS

1. The procedure changes listed on this form shall not change the intent of the procedure.
2. If a screening for 10 CFR 50.59 applicability is required in accordance with QP 3-3, then complete applicable portions of Form QP 3-3.1 and attach. screening has not been completed, provide a brief explanation why: The change is within the existing 50.59 evaluation performed for the modification, SER 91-025-03
3. If this procedure change implements a temporary change/modification to the facility, then a temporary modification form, PBF-2013, shall be completed described in PBNP 2.1.3 and attached.
4. If notification of others is required because of these changes, then such notification has been initiated. Groups/Individuals notified: Field copy holders notified

Step	Change/Reason
3.1.1.c,d,e	Deleted the adjustment of the high limit on PC-4019 since the P38B pump will be tagged out before its mini-recirc line is isolated.
3.1.1.f	Added a CAUTION that the Phase II tag out is to be done before the Phase I tag out. Also, deleted AF-40 from the tag series since both the Phase I & II tag outs will be hung before allowing work and AF-40 is within the tagged out boundary. Also added a note on the tag outs.
3.1.2.a	Allowed the bonnet of AF-40 to be removed to facilitate drainage.
3.1.2.b	Revised the note above this step since the existing AF-40 will not be tagged.
3.1.2.p,q,n	Removed the adjustment of the high limit on PC-4012. This step will be done after P38B is declared operable because its adjustment makes the P38A discharge valve go to 11 open. Use continuation sheet, PBF-0026c for additional description of changes. for a period of time

Changes originated by John A Schroeder Date 9/12/91

APPROVAL PRIOR TO USE

John A Schroeder Date 9/12/91 Time

DSS or Cognizant Supervision

SUBSEQUENT REVIEW AND APPROVAL

Paul Albers Date 10-9-91

Cognizant Group Head

Permanent procedure change required? ☐ Yes ☒ No

If yes, revision initiated by: Originator ____ Date ____

PBF-0026f
Rev. 0.04.01.91

POINT BEACH NUCLEAR PLANT

PROCEDURE REVIEW AND APPROVAL CONTINUATION SHEET

PROCEDURE IWP 88-099*B2, P38B Mini-Recirc Line Modification

Revision 0 Date 9/6/91

DESCRIBE CHANGES (Continued)

Step	Change/Reason
3.1.3a	Added AF-30 valve to the tag list to provide isolation of the pump cross connect line. Isolated the cross connect line at AF-30 instead of AF-43 since a support between these valves will be modified.
3.1.3b	Deleted this step since Temp Info Tag 91-37 was not posted.
3.1.4	Added a NOTE to this section stating that the two tag outs are to both be completed before allowing any work.
3.1.7	Added a NOTE to this section to allow the electrical leads for the transmitter to be worked at anytime in the section.
3.1.7j.	Deleted the resetting of PC-4019 since it was not adjusted.
4.1	Deleted testing of the P38B pump discharge valve since its controller was not adjusted.

DESCRIBE DESIRED TRAINING (If Applicable):

Initials

POINT BEACH NUCLEAR PLANT

PROCEDURE REVIEW AND APPROVAL CONTINUATION SHEET

PROCEDURE IWP 88-044+B'Z, P38B Mini-Recirc Line Modification

Revision 0 Date 9/6/91

DESCRIBE CHANGES (Continued)

Step	Change/Reason
4.3.2	Deleted the stroking of AF-4019 P38B discharge valve
5.2.2	Added steps to reset the high limit of PC-4012 after the P38B pump is declared operable.
3.11.c	Change Temp. Info. Tag number to 91-38, 91-36 previously cleared out and 91-39 (91-30 previously cleared out)
3.1.2.j	Change temp. Info. tag number to 91-39, (91-30 previously cleared out).

DESCRIBE DESIRED TRAINING (If Applicable):

Initials

P-38B AFW PUMP

1.0 SCOPE

1.1 The purpose of this modification is to increase the flow capacity of the P-38B AFW Pump mini-recirc line and to install flow indication on this line for ASME Section XI testing.

1.2 The scope of this procedure is to replace the existing 1-1/2 inch recirc line with a 2 inch line, add a flow orifice and transmitter, and change the setpoints for AF-4014 (P-38B Aux Feedwater Pump Recirc Line Control Valve). In addition, two supports in the pump discharge line will be modified.

1.3 The installation will be broken into two sections called Phase I and Phase II. Phase I will isolate the recirc line return header for all four AFW Pumps, cut and cap the existing recirc line on the P-38B pump and install the new recirc line for P-38B up to the new manual valve AF-40. A hydrostatic test will then be completed and the recirc line return header returned to service. Phase II will complete the mini-recirc line work for P-38B from the tie-in at the pump discharge line up to new manual valve AF-40. Phase II will be done with P-38B out of service under a 7 day LCO. All electrical and I&C work will be completed during Phase II. The two Phases may be worked in series or simultaneously depending on available manpower. Leak and functional testing of the new components will be performed prior to declaring P-38B operable and ending the 7 day LCO.

1.4 This is QA scope work.

QA Scope Clarifications:

The control valve (AF-4014), piping, check valve, and sockolet upstream of AF-4014 are QA scope. The piping, fittings, valves, etc. downstream of AF-4014 are non-QA scope. All support hardware is to be QA.

NOTE: Any representative from the Site Construction and Engineering Group may sign for the RE in this IWP.

2.0 PRE-INSTALLATION REQUIREMENTS

2.1 References:

2.1.1 Working drawing(s):

PBA-1070 sheets 4, 5 & 6
SK-AFW-002/88-099
SK-AFW-009/88-099
SK-AFW-011/88-099
SK-AFW-012/88-099
SK-AFW-013/88-099
SK-AFW-014/88-099
SK-AFW-015/88-099

2.1.2 Permanent drawing(s):

Bechtel E-98 sheet 4
Bechtel M-209 sheet 4
Bechtel M-217
Bechtel P-103

2.1.3 Approved setpoint change for dPIS-4014.

2.1.4 Spec sheet for flow orifice for transmitter calibration.

2.1.5 Calibration sheet for flow transmitter AF-04050B

2.1.6 Cable and Raceway schedule for IWP 88-099*B2

2.1.7 Cable and Raceway Installation and Termination Tickets for IWP 88-099*B2

Responsible engineer has assured that all references listed above are approved and are either with the proper installation group, attached or readily available to the installation group.

R.E. J. A. Schroeder Date 9/12/91

2.1.8 MI 5.2, "Air Operated Valves"

2.1.9 MI 7.1, "Installation Of CEAs," or equivalent

2.1.10 MI 32.1, "Flange and Closure Bolting," or equivalent

2.1.11 MI 32.4, "Guidelines For Exclusion Of Foreign Material From Plant Systems," or equivalent

2.1.12 The installation is to be in accordance with B31.1-1967.

2.1.13 Welding Procedures: Phillips-Getschow WPS 1, WPS 8, WPS 8-1, and AWS D1.1.

2.1.14 MI 26.1.1, "General Instructions For Crimp Style Cable Terminations, Splices, and Connections"

2.1.15 PB-196, "Specification for Non-Safety Related Electrical Installation"

2.1.16 MI 32.8, "Guidelines for Opening Piping Systems"

2.1.17 MI 32.9, "Erection of Tube and Clamp Sectional Scaffolding"

2.1.18 Rosemount Tech Manual No. 00325

2.2 Background References (those references not needed to perform work):

2.2.1 MR 88-099 Design Package B

2.2.2 Calculations N-91-063 and N-91-069.

INITIALS

2.3 Installation Preparation Activities

2.3.1 The Bill of Materials (BOM) is attached to this IWP.

The responsible engineer has assured that all materials on the BOM are on site, available for the modification, and QA released. JAS RE/LE

2.3.2 CHAMPS No's and labels for the new transmitters, power supplies and flow orifices will be requested as a closeout item for the mod. ID tags for the equipment being replaced (i.e. control valve, manual valve, ... etc.) will be transferred from the old components to the new components in the steps of the IWP.

2.4 Prefabrication Work

NOTE: *Using the referenced working drawings, the layout of the piping run should be verified before beginning pre-fab work.*

NOTE: *The flow orifice flange must be oriented so that the sensing line connections will be at the horizontal centerline of the pipe when installed.*

Prefabricate as much of the piping run and supports as possible in accordance with the referenced working drawings. Do not attach the sockolet or half coupling to the piping at this time. Visual examinations of all butt welds at fit-up, root pass and completion is to be performed. A visual examination of the final pass on all socket welds and support welds is to be performed. JAS PG

The responsible engineer has assured that all prefabrication is completed and available for the modification.

R.E. [signature] Date 9/12/91

2.5 Identification of Permits Required

2.5.1 The MWRs for the IWP have been written and submitted to CHAMPS. The MWR numbers have been recorded on the IWP coversheet.

2.5.2 Ignition Control permits will be required and shall be obtained by the contractor supervisor when needed.

2.5.3 Tag outs are done in two phases and will be completed as part of the installation. In addition, the tagging out of the power to the electrical outlet to allow the final terminations for transmitter power will be completed in the installation steps of Phase II so that the duration that outlet power is out is minimized.

INITIALS

2.6 Personnel Safety Concerns

Use standard precautions when cutting, welding and grinding. Use care when initially opening the mini-recirc line since there are no drains in the mini-recirc lines or the common return header and therefore a significant amount of water will be present. Contain any water drained from these lines.

2.7 Pre-Installation Discussion

2.7.1 A field walkdown shall be performed to verify that all aspects of the procedure may be performed as intended.

Inst. Sup. John H. Schroeder Date 9/12/91

2.7.2 A Pre-Installation discussion with the installation group representatives, testing group representative, and the acceptance group representative has been performed.

R.E. John H. Schroeder Date 9/12/91

2.8 PG-QC has been asked to submit form SB 190 (ref. ILHR 41.56) and to notify the ANI.

Inst. Sup. John H. Schroeder Date 9/12/91 Per Down Checklist

3.0 INSTALLATION

NOTE: Phase I and Phase II may be worked simultaneously if desired.

3.1 Installation Description

NOTE: If any of the steps cannot be completed as written or a change is necessary to complete the task, work must stop and the situation must be discussed with the responsible engineer, an SCE group member, or the installation supervisor.

3.1.1. Phase I: Equipment Isolation and Tag Out

The pre-installation requirements for Phase 1 have been met and it is acceptable to proceed with the Phase 1 tag out.

R.E. John H. Schroeder Date 9/12/91

INITIALS

NOTE: Inservice Aux Feedwater pumps are considered operable with their respective mini-recirc lines isolated if the discharge path for each pump is maintained open to at least one steam generator.

***CAUTION*:** **IF AN AUX FEEDWATER PUMP AUTO STARTS OR NEEDS TO BE RUN, DO NOT OPERATE THE PUMP AT A DISCHARGE INDICATED FLOW OF <50 GPM WHEN THE MINI-RECIRC LINE IS ISOLATED.**

a. Adjust AF-4012 controller to maintain a minimum position of 10% open by performing the following, I&C to coordinate work with Operations.

1. Station one man at AF-4012 to measure valve movement.

2. Adjust the high limit on PC-4012 until valve moves between 1/16 and 1/8 inch open. AF-4012 adjusted — MJC I&C

b. Stroke AF-4012 to verify operation. — MJC OPS

Delete Steps since P38B will be tagged out before its mini-recirc line is isolated
JAS
9/18/91

~~c. Adjust AF-4019 controller to maintain a minimum position of 10% open by performing the following, I&C to coordinate work with Operations.~~

~~1. Station one man at AF-4019 to measure valve movement.~~

~~2. Adjust the high limit on PC-4019 until valve moves between 1/16 and 1/8 inch open. AF-4019 adjusted.~~ — ~~I&C~~

~~d. Stroke AF-4019 to verify operation.~~ — ~~OPS~~

e. Post Temporary Information Tags as directed by Temporary Information Sheets 91-38, 91-39 ~~and 91-37~~ and 38 — OPS
TC 9/17/91 JAS 9/11/91

NOTE: Both the phase I tag out in step 3.1.1.f and the phase II tag out in step 3.1.3 are to be completed following work on phase I or phase II before
JAS 9/11/91

INITIALS

CAUTION: The phase II tagout in step 3.1.3.a is to be done before the tag out in the next step. JAS 4/11/91

f. Tag out the system per the following list.

COMPONENT ID	DESCRIPTION	POSITION
AF-15	1P-29 mini-recirc manual isolation	Shut
AF-27	P-38A mini-recirc manual isolation	Shut
~~AF-40~~	~~P-38B mini-recirc manual isolation~~	~~Shut~~
AF-53	2P-29 mini-recirc manual isolation	Shut
AF-1	T-234A/B CST mini-recirc isolation	Shut

Delete this Tag. JAS 9/11/91

Tag Series 91-706

OPS

The pre-installation requirements for Phase 1 have been met and it is acceptable to proceed with Phase 1 of the installation.

DSS _____ Date 9/16/91

3.1.2 Phase 1: Installation

NOTE: Individual and common recirc headers cannot be adequately drained. The horizonal 3" header may have to be siphoned to create suitable welding conditions.

a. Drain the system by cutting or drilling the P-38B mini-recirc line ~~downstream~~ of the existing AF-40, and/or by removing relief valve AF-4035 in the common mini-recirc return header. Control drainage as well as possible by using hoses, catch basins, etc. Coordinate with OPS as necessary.

or by removing the bonnet JAS 4/11/91

JAS
PG

b. Remove relief valve AF-4035 from the common mini-recirc return header if not already done and set up an Argon purge for welding.

JAS
PG

c. Cut the existing 1-1/2" recirc line for P-38B close to the 3" common recirc header and siphon the water from this header as necessary to provide a suitable welding environment.

JAS
PG

INITIALS

d. Remove the section of the existing recirc line from the 3" common recirc header to the first elbow downstream of AF-40. Also remove the existing support in the vertical section of this line and repair the wall. JAS PG

e. Weld a 1-1/2" cap (see BOM) on the cut off line. Visually inspect the new weld. JAS PG

NOTE: Support the new recirc line spoolpiece installed in the next step with a temporary support rated for 400 lb.

f. Install the prefabricated section of piping which includes the new AF-40 by making a new penetration into the 3" common recirc header and welding in the half coupling per SK-AFW-002/88-099. Visually inspect all new piping welds. New support DB3A-2003G may be installed per the referenced Working Drawings at this time. JAS PG

g. Remove the argon purge from the piping connection for relief valve AF-4035. JAS PG

NOTE: Place the red tag installed in the next step on the tag series created for Phase II if two separate tag series will be used. ~~Note that for a period of time, there will be tags for both the old and new AF-40 valves.~~ JAS 9/11/91

h. Red Tag the new AF-40 valve shut. OPS

i. Align the system as necessary and hydro the mini-recirc header per the PBNP 3.2.5 sheet attached. Connect the hydro rig to the flanged connection for relief valve AF-4035. Document the hydro on the attached hydro sheet. OPS

j. After a satisfactory hydro, replace relief valve AF-4035 using a new 2" flexitallic gasket. Torque nuts to 60 ft-lbs using a staggered pattern. S.E.J. PG

k. Clear Red Tags for AF-15, 27, and 53, and lock these valves open. Also clear the red tag for AF-1. OPS

INITIALS

JAS 9/11/91

~~l. Set the high limit on controller PC 4012 to 51 milliamps.~~ ~~I&C~~

~~m. Stroke AF-4012 to verify operation.~~ ~~OPS~~

n. Remove the temporary Temporary Information Tags for 1P-29, and 2P-29 [redacted] Temporary Information Tags 91-~~80~~ 39 ~~and 91-3C~~. JAS 9/11/91 DG 9/11/91 — OPS: DG

JAS 9/11/91

NOTE: At this time the 1P-29 and 2P-29, ~~and P-38A~~ auxiliary feed pumps should be considered inservice with no restrictions on discharge flow. — DSS: DG

3.1.3 Phase 2: Equipment Isolation and Tag Out

Record the time and date at which P-38B is removed from service starting the 7 day LCO.

DSS [signature] Date 9/16/91 Time 0436

a. Phase 2: Tag Out

JAS 9/11/91

COMPONENT ID	DESCRIPTION	POSITION
2B52-31C	P-38B breaker ~~on~~ 2B 2B04	Racked Out
2B52-31C Control Power Fuses	P-38B breaker control power	Off
AF-44	P-38B discharge to 1HX-1B	Shut
AF-45	P-38B discharge to 2HX-1B	Shut
AF-52	P-38B suction for CST	Shut
AF-4016	P-38B SW suction MOV control switch	Closed
.F-4016	P-38B SW suction MOV handwheel	Shut
2P52-426C	AF-4016 Bkr on 2B42	Open
IA-358	AF-4014 IA supply	Shut
AF-46	P-38B discharge casing drain	Open
AF-46A	P-38B discharge high point vent	Open
AF-46B	P-38B discharge high point vent	Open
AF-30	P-38A and P38B Crossconnect	Shut

JAS 9/11/91

Tag Series 91-707 — OPS: DG

INITIALS

~~b. Remove the temporary Temporary Information Tag for P-38B, Temporary Information Tag 91-97.~~ JAS 9/11/91

3.1.4 Phase 2: Installation

The isolation requirements for Phase 2 have been met and it is acceptable to proceed with the installation.

Disconnect the solenoid valve and limit switches from the existing AF-4014. New limit switches will be used on the new AF-4014 and therefore it's cabling is to be disconnected. The solenoid valve will be reused, therefore it's cabling may be left connected. Ensure that disconnected cables are adequately labeled for reconnection and fill in the attached wire removal form (EQR-36). Reference Dwg. E-98 Sheet 4. Save the solenoid valve for use on the new control valve.

JAS
Pieper/PG

NOTE: The Phase 2 recirc line mechanical work, discharge line mechanical work and Electrical/I&C work as broken down in Sections 3.1.5, 3.1.6, and 3.1.7 may be worked simultaneously as practical. The steps within the sections are to be completed in order.

3.1.5 Phase 2 Recirc Line Mechanical Work

NOTE: Rinse out all new components with DI water before installation. Wipe down the outer surfaces of the new components after installation.

a. Remove the remainder of the old mini-recirc line up to and including the connection to the 3" pump discharge line. Also remove the existing support immediately downstream of existing valve AF-40 and repair the wall. Save the ID tags from the removed components.

JAS
PG

b. Install the base plates for new supports DB3A-2001G, DB3A-2002G (and install support DB3A-2003G if it was not previously installed). Remove the angle from the support which was immediately downstream of the old mini-recirc control valve (support DB-3-H208) and grind the base plate smooth.

JAS
PG

c. Inform the ANI of the schedule for installing the sockolet in the following step so the ANI may witness the fit-up, root pass and final pass inspections if desired.

JAS
PG

Note: Both edge Phase I tag out in step 3.1.1, f and the Phase II tag out in step 3.1.3 are to be completed before allowing work on Phase I or Phase II. JAS 9/11/91

INITIALS

NOTE: In the next step the flow orifice must be oriented so that the sensing line connections are located at the horizontal centerline of the pipe. After installing the orifice plate in-between the flanges, tighten the flange studs per MI 32.1 or equivalent.

d. Install the new recirc line from the sockolet fitting on the discharge header up to the new AF-40 (installed in Phase I). See SK-AFW-009/88-099 for details. Perform visual exams on each butt weld at fit-up, root pass, and at completion. Visually inspect all welds at completion. Perform PT exam of 2"X 3" sockolet (open butt end) at connection weld to 3" header at the root pass and the final pass. Also perform PT examinations of the two socket welds upstream of the check valve. The NDE acceptance criteria is to be per B31.1, 1986 or a reconciled code.

JAS
PG

e. The NDE described in the step above has been documented and was found to be acceptable.

PG QC Inspector [signature] Date 9-19-91

f. Complete the installation of piping supports on the new mini-recirc line (i.e. Supports DB3A-2001G, DB3A-2002G, DB3A-2003G) per the referenced working drawings. For the DB-3-H208 support, weld on a 3" X 3" X 3/8" A36 angle onto the base plate via a 1/4" fillet weld all around and install a 3/8" diameter U-Bolt for the 2" pipe. If necessary, weld on a shim via a 3/16" fillet weld on both sides. There is to be an approximate 1/16" gap between the pipe and U-Bolt on all sides. Perform visual exams on all new support welds.

JAS
PG

g. Install the ID tags which were saved from the old mini-recirc line onto the new components in the mini-recirc line. Attachment cable, crimps and tools are available from CHAMPS.

JAS
PG

INITIALS

3.1.6 Phase 2 Discharge Line Mechanical Work

a. Rig a temporary support for the pump discharge cross connect line near existing support DB3-2H6 as described by the RE below;

Use the jackstand and base plate built for IWP 88-099*B1. Place it under or just upstream of valve AF-43

R.E. John T. Schroeder Date 9/17/91 JAS PG

b. Remove the existing stanchion and bottom plate welded onto the base plate from support DB3-2H6 in the pump discharge cross-connect line (see Drawing P-103 for location). Grind off and buff the area where the stanchion to pipe weld and bottom plate to base plate weld were. JAS PG

c. Measure the wall thickness of the pipe at the ground off area. Record the minimum wall thickness noted below. The minimum acceptable wall thickness is 0.2625 inches.

Min. Wall .280 minimum inches L. Bright PG

d. Install the new 3" pipe stanchion for the DB3-2H6 support per Drawing SK-AFW-014/88-099. JAS PG

e. Remove the temporary support placed on the piping for the DB3-2H6 support work. JAS PG

f. Rig a temporary support for the P-38B discharge line just upstream of MOV-4020 near existing support DB3-2H7 as described by the RE below;

Use the jackstand and baseplate built for IWP 88-099*B1. Place it just downstream of valve AF-4020

R.E. John T. Schroeder Date 9/17/91 JAS PG

INITIALS

g. Remove the existing stanchion and bottom plate welded to the base plate from support DB3-2H7 in the P-38B discharge line just upstream of MOV-4020 (see Drawing P-103 for location). Grind off and buff the area where the stanchion to pipe weld and bottom plate to base plate weld were. JAS PG

h. Measure the wall thickness of the pipe at the ground off area. Record the minimum wall thickness noted below. The minimum acceptable wall thickness is 0.2625 inches.

Min. Wall .2687 minimum inches D. Pieper PG

i. Install the new 3" pipe stanchion for the DB3-2H7 support per Drawing SK-AFW-015/88-099. JAS PG

j. Remove the temporary support placed on the piping for the DB3-2H7 support work. JAS PG

3.1.7 Phase 2 Electrical and I&C Work

NOTE: All cables and raceways shall be installed per Specification PB-196. Raceways shall be seismically supported. Complete attached installation and termination tickets for cables and raceways.

NOTE: Steps 3.1.7.a, g, h can be completed at any one, but must be completed in sequence. (i.e. step f, step g, step h).
JAS
9/11/91

a. Install support for flow transmitter per Drawing SK-AFW-013/88-099. The transmitter must be located below the pipeline. The exact location is to be per responsible engineer direction. JAS PG

b. Install transmitter and manifold on its support and install 3/8 inch SS tubing from the transmitter to the orifice plate, per Rosemount Tech Manual, Control No. 00325. Stainless steel Swagelok fittings and Whitey valves (see BOM) are to be installed as necessary. Route the tubing so that it slopes up from the transmitter to the orifice flange. JAS I&C

c. Mount the existing solenoid valve on the new AF-4014 valve and reconnect the air lines and cable. Reconnect the cable removed from the old limit switches onto the new limit switch. Reference the attached wire removal forms. JAS Pieper/PG

INITIALS

d. Clear the red tag on the instrument air supply to AF-4014, clear IA-358. — MW / OPS

e. Set the regulator for valve AF-4014 to 100 psig. — MC / OPS

f. Tag out the following circuit prior to making the final terminations for power to the transmitter. Lighting Panel 7L, Circuit 25, AFW area Receptacles. Position: OPEN — KD / OPS

g. Install conduit 7L25-2 and pull and terminate cable 7L25B. Install flexible conduit from TB142 to the transmitter (4050B-1) and pull and terminate cable I4050BA. Reference drawings SK-AFW-011/88-099 and SK-AFW-012/88-099, the cable and raceway schedules, and installation and termination tickets attached. — JAS / Pieper

h. Remove the red tag for breaker 7-L-25 issued in the above step and close the breaker. — MW / OPS

i. Calibrate new transmitter FIT-04050B per the attached calibration sheet. — JAS / I&C

JAS 9/11/91 ~~j. Set the high limit on controller PC-4019 to 51 milliamps.~~ — N/A I&C

3.2 As-Built Description

3.2.1 This IWP was installed by:

PG Phillips, Getschow Co.

Electrical Maintenance Work Pieper Electric

I&C PBNP I&C Group

3.2.2 List any ECRs, NCRs, or other considerations that effect the "as-built" condition of the modification.

ECRs PB-91-054, 056, 057, 061, 062, 063

INITIALS

3.3 The installation was completed as described above.

Inst. Sup./WE [signature] Date 9-19-91

Inst. Sup./I&C [signature] Date 9-19-91

Inst. Sup./MTN MTN group did not work on this IWP. JAS 9/19/91 Date

R.E. [signature] Date 9/19/91

The QC requirements of this installation have been completed. The QC requirements consist of hydrostatic testing and visual and surface inspection of welds as described above.

PG QC Inspector [signature] Date 9-18-91

4.0 TESTING

4.1 Testing Scope

The testing section will perform hydro and leak checks on the portions of the new piping line which were not hydro tested in the installation section. Functional tests of the new mini-recirc valve~~, the pump discharge control valve~~ and the pump itself will also be performed. By taking readings on the new transmitter during performance of IT-10, mini-recirc line flow capacity will be verified. In addition, the setpoints for the new mini-recirc valve will be adjusted in this section. It can be noted that visual inspections of all welds and all necessary NDE was completed in the installation section of the IWP. JAS 9/11/91

4.2 Testing Prerequisites

4.2.1 Clear all red tags associated with this IWP. OPS

4.2.2 Fill and vent pump P-38B. OPS

4.2.3 A revised copy of IT-10 which accounts for the modification is available for use. Rev. 22 OPS

4.3 Testing and Testing Acceptance Criteria

4.3.1 Change setpoints on dPIS-4014 from 30 and 75 gpm to 75 and less than or equal to 95 gpm respectively. See the approved setpoint change sheet attached. I&C

INITIALS

4.3.2 ~~Stroke P-38B discharge valve AF-4019 and observe full valve travel to ensure the high limit on PC-4019 was returned properly. The valve operated properly.~~ JAS 9/11/91 GPE

4.3.3 Stroke the new mini-recirc valve AF-4014 by use of the manual handwheel to ensure proper operation. OPS

4.3.4 Stroke the new mini-recirc → via handwheel valve AF-4014 and observe valve travel and indicating lights to ensure proper operation of the valve and connection of the limit switch and solenoid cabling. The valve operated properly. OPS

NOTE: LIMIT SWITCH needs ADJUSTMENT.

4.3.5 Align system as necessary and hydro the DB-3 portion of P-38B recirc line between new check valve AF-116 and valve AF-40 per PBNP 3.2.5. See attached Hydro Data Sheet for this section of pipe. The results were acceptable per PBNP 3.2.5 and the test has been documented on the attached sheet. OPS

4.3.6 During performance of IT-10 in the following step take a flow reading from FIT-04050B while AF-4014 is open. 88.3 gpm The flow reading must be between 70 and 100 gpm. OPS

4.3.7 Perform the revised IT-10 on P-38B. An Initial Service Leak Test is to be performed on the new portion of piping between the pump discharge line and check valve AF-116. Attach a copy of the completed IT-10 and complete the PBNP 3.2.5 pressure test sheet attached. The results of the leak check and IT-10 were acceptable. OPS

4.4 Testing Complete

The testing is completed and adequately tests the modification and the associated installation.

DSS _____ Date 9-19-91

R.E. _____ Date 9/19/91

5.0 RESTORATION

5.1 Pre-Acceptance

The following items must be completed prior to acceptance:

5.1.1 All testing described above has been satisfactorily completed.

5.1.2 The ID tags from the components in the old min-recirc line have been transferred onto the equivalent component on the new mini-recirc line. → Done. JAS

5.1.3 Control room P&ID M-217 has been revised to show the new components added by the modification. → Done. JAS

5.1.4 The control room copy of the Setpoint document STPT 14.11 has been marked up to list the new setpoints associated with mini-recirc valve AF-4014. → Done. JAS

5.1.5 IT-10 has been temporarily or permanently revised to account for the modification. → Done. Rev. 22 JAS

5.1.6 Close out of all the permits associated with this IWP has been initiated. MWR's attached

All of the above items have been completed, AFW pump P-38B may be returned to service.

R.E. or DSS JAS for JAS Date 9/12/91

5.2 Return To Service

1. Return AFW pump P-38B to service. Record the time and date at which this is completed ending the 7 day LCO.

DSS [illegible] KS Date 9-19-91 Time 2230

→2.

6.0 ACCEPTANCE

This installation and the associated modification have been installed and tested and are acceptable.

Mgr. OPS or DSS: [signature] Date 9/20/91

Return Completed IWP and Modification to the Responsible Engineer.

a. Set the high limit on controller PC-4012 to 51 ma. I&C

b. Stroke AF-4012 to verify operation. MW OPS

c. Remove the Temporary Information Tag for P38A, Temporary Information Tag 91-38. MW OPS

JAS
9/11/91

PARTS LIST / BILL OF MATERIALS FOR FOR IWPs 88-099*B1 & B2

MOD REQUEST 88-099*B / ~~DRAWING / SKETCH NO.~~ ONE HALF QUANTITY LISTED REQUIRED FOR EACH IWP

ITEM NO.	QUANTITY REQUIRED	MATERIAL DESCRIPTION/ SERVICE RATING	VENDOR/ CATALOG NO.	LOT NO. / MOD BIN / P.O. NO.
1	2	2", 1500# class, Globe Valve, Conval Clampseal, Stainless Steel, SW	Conval #1262-316	Lot # 9042059 Obtain From Mod Bin
2	2	2", 90° Elbow, SW Ends, S.S Type 304, 3000#	———	Lot # 9015019 Obtain From Stock
3	2	2" Flow Orifice Flanges, Flange Set with Bolting and gaskets, SS Type 304	———	P.O. # 185010 Obtain From Mod Bin
4	2	Flow Orifice plate, SS Type 316	———	P.O. # 185010 Obtain From Mod Bin
5	2	2" 1500# Control Valve, SS	Copes Vulcan #2IA88RG	P.O. # 183687 Obtain From Mod Bin
6	2	Flow Restricting Orifice, SS Type 304, SW ends	Borg Warner #125885-CH	P.O. # 183706 Obtain From Mod Bin
7	2	Flow Transmitter With Integral Display, Supplied With Manifold	Rosemount #1150-150-2# #1151DP-5-S-22-B1-M5	P.O. # 184161 Obtain From Mod Bin
8	2	6"x6"x4" Electrical Enclosure NEMA 12 JIC panel	———	P.O. # 160141 Obtain From Mod Bin
9	2	Transmitter Power Supply	Rosemount #49-15-401	P.O. # 181528 In I&C Mod Bin
10	AS NEEDED	2", sch. 40, seamless pipe, Type 304L	———	P.O. # 184859 Obtain From Mod Bin
11	AS NEEDED	2", sch. 80, seamless pipe, Type ~~304~~ 316	———	P.O. # 184859 Obtain From Mod Bin
12	4	2" Sch 40, 90° Elbow, SW, Type 304	———	P.O. # 184860 Obtain From Mod Bin
13	2	2", sch. 40, 45° Elbow, SW, Type 304	———	P.O. # 184860 Obtain From Mod Bin
14	2	2" half coupling, for use in 3" branch line, Type 304, 3000#	———	To Be Supplied By P.G. (CONV-GA)
15	2	1½" sch. 40 pipe cap, SW, Type 304	———	P.O. 184860 Obtain From Mod Bin
16	2	2", 1500# class, check valve, S.S. Type 316	Rockwell Edwards #3674F316J	Lot # 9041389 Obtain From Mod Bin
17	2	¾"x2" 3000# Sockolet Type Fitting	———	P.O. # 185036 Obtain From Mod Bin

PARTS LIST / BILL OF MATERIALS FOR

MOD REQUEST 88-099*B / DRAWING / SKETCH NO. _____

ITEM NO.	QUANTITY REQUIRED	MATERIAL DESCRIPTION/ SERVICE RATING	VENDOR/ CATALOG NO.	LOT NO. / MOD BIN / P.O. NO.
18	AS NEEDED	2", sch 80 seamless pipe, Type 316	_____	P.O. # 185036 Obtain From Mod Bin
19	4	3/8" Whitey Valve, SS-1V56, For Transmitter Isolation	Whitey # SS-1V56	I&C To Obtain From Stock
20	4	3/8" Swagelok Tee, SS-600-3, For Transmitter Sensing Lines	Swagelok # SS-600-3	I&C To Obtain From Stock
21	4	3/8" Swagelok Plug, SS-600-P	Swagelok # SS-600-P	I&C To Obtain From Stock
22	AS NEEDED	3/8" S.S. Tubing, 0.065" wall Thickness Type 304 or 316	_____	I&C To Obtain From Stock
23	AS NEEDED	Miscellaneous Stainless Steel Swagelok Fittings Needed for the Transmitter Lines	_____	I&C To Obtain From Stock
24	AS NEEDED	3/8" ϕ x 5" long Hilti Kwik Bolt II	_____	Lot # 9030907 Obtain From Stock
25		1/2" ϕ Hilti Kwik Bolt II	_____	Lot # 9030908 Obtain From Stock
26		1" ϕ Hilti Kwik Bolt II	_____	Lot # 9030911 Obtain From Stock
27		1/2" Thick A-36 Plate	_____	Lot # 9027700 Obtain From Stock
28		1" Thick A-36 Plate	_____	Lot # 9030198 Obtain From Stock
29		2"x2"x 1/4" Thick A-36 Angle	_____	Lot # 9027726 Obtain From Stock
30		C 3x4.1 Channel A-36	_____	Lot # 9028919 Obtain From Stock
31		C 4x7.25 Channel A-36	_____	Lot # 9030657 Obtain From Stock
32		3" sch. 80 Pipe, A106 Grade B	_____	Lot # 9023143 Obtain From Stock
33	V	3/4" x 2" Standard U-Bolt w/Nuts	Grinnel # 137N	Lot # 9027629 Obtain From Stock
34	AS Needed	2" sch. 80 pipe, A106 Grade B	_____	Lot # 9017704 Obtain From Stock

PARTS LIST / BILL OF MATERIALS FOR

MOD REQUEST 88-099*B / DRAWING / SKETCH NO. _____

ITEM NO.	QUANTITY REQUIRED	MATERIAL DESCRIPTION/ SERVICE RATING	VENDOR/ CATALOG NO.	LOT NO. / MOD BIN / P.O. NO.
35	AS Needed	3"x3"x 3/8" Angle A-36	———	Lot # 9030352 Obtain From Stock

Form DG-G02.1
Revi n 1

Wisconsin Electric POWER COMPANY

231 W Michigan PO Box 2046 Milwaukee WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-054

Mod # 88-099*B

Responsible Engineer: John A. Schroeder

Portions Of Mod Are QA

QA Scope [X] Yes [ ] No

System: AF

Equipment: AFW Mini-Recirc Line For P38B

Reference Documents: Drawing SK-AFW-009/88-099

Problem Description and Proposed Change:

Revision Ø of the piping isometric for the P38B mini-recirc line can not be installed as shown. An existing pipe hanger interferes with the proposed routing in the horizontal section of piping downstream of manual valve AF-40. In addition, the dimensions [illegible] the [illegible] run downstream of valve AF-4014 add up so that the piping sticks into the hallway by approx 18".

Attachments: [ ] Yes [X] No

Initiated By/Date: John A Schroeder 8/28/91

Preliminary Approval By/Date: N/A

Resolution Needed by Date:

Resolution: Revise the dimensions in the horizontal runs of piping as shown in the [illegible] Delete the existing 45° jog shown in the isometric and add two 45° jogs of approx. 4" and 30" offset as shown in the attached marked-up sketch. Sargent & Lundy has verbally approved of this change. This portion of the piping is Non-QA. Note that [illegible] recommended distance between the control valve and flow orifice [illegible] is 20-22 nominal pipe diameters, thus the 40" length [illegible] Sargent & Lundy [illegible] appropriate. See the memo from Sargent & Lundy

Attachments: [X] Yes [ ] No

Change Required:

__ Specs:

__ Procedures:

X Drawings. SK-AFW-009/88-099 (to be as-built after the modification is complete.)

__ Other

Design Verification Required: [ ] Yes [X] No
Completed: Date:

MR Addendum Required: [ ] Yes [X] No
Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No
Completed: Date:

Resolution By/Date: John A Schroeder 8/28/91

Responsible Engineer Review/Date: John A Schroeder 8/28/91

QA Review By/Date: [illegible] 8/28/91

Group Head Approval/Date: [illegible] 8/28/91

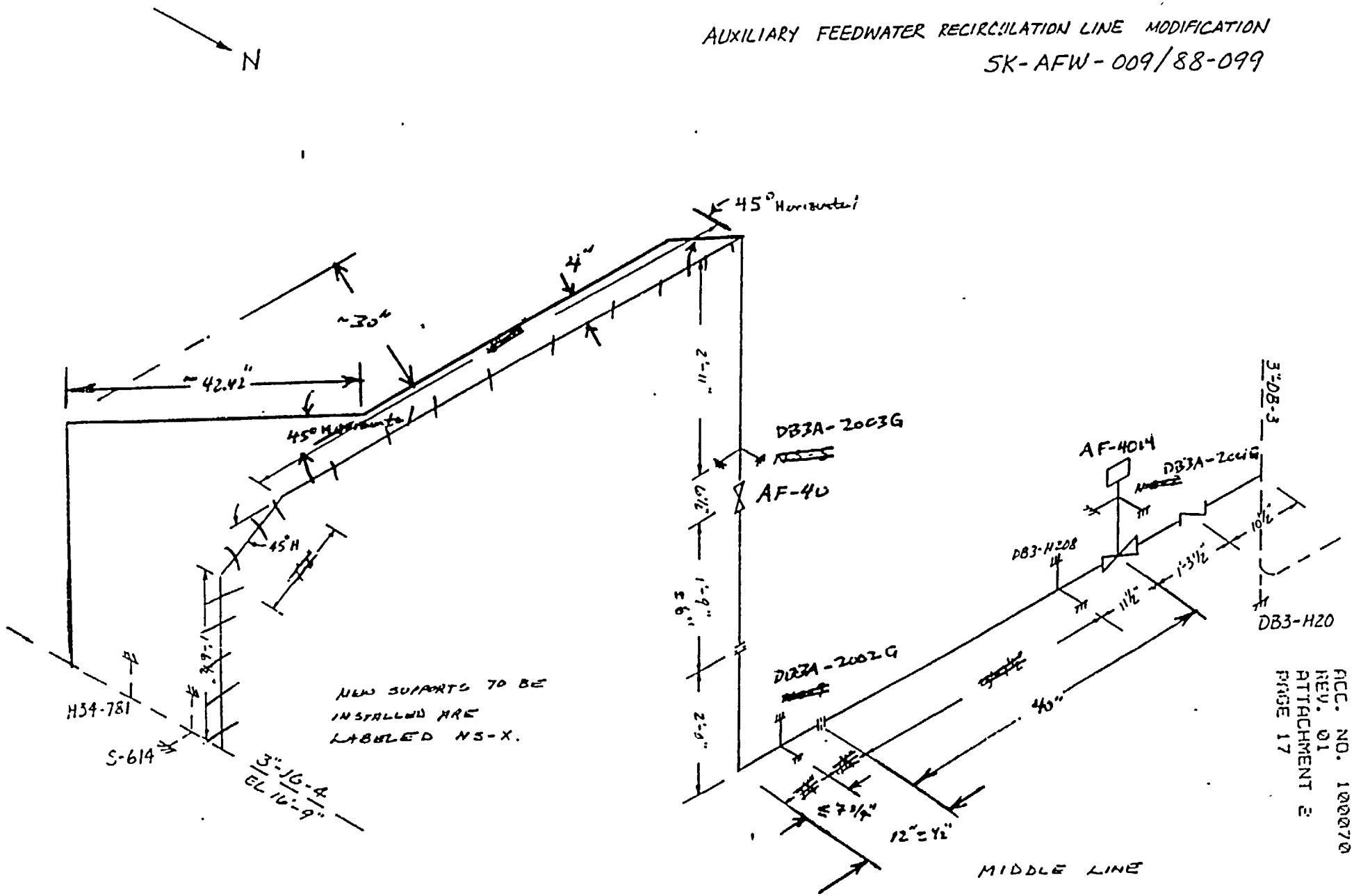
Additional Reviews By/Date

Implementation Completed By/Date

Form [illegible]
Rev [illegible]

AUXILIARY FEEDWATER RECIRCULATION LINE MODIFICATION

SK-AFW-009/88-099



SARGENT & LUNDY
ENGINEERS
FOUNDED 1891
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780
(312) 269-2000

August 28, 1991
Project No. 6904-22

Wisconsin Electric Power Company
Point Beach Nuclear Power Plant - Units 1 and 2

Auxiliary Feedwater Recirculation Line Routing Changes

Mr. G. D. Frieling
Nuclear Engineering and Analysis Section
Point Beach Nuclear Plant
6610 Nuclear Rd.
Two Rivers, Wisconsin 54241

Attention: Mr. J. Schroeder

Dear Mr. Frieling:

Sargent & Lundy has reviewed the attached sketches provided by your Mr. J. Schroeder showing required routing changes to the original design of the Auxiliary Feedwater Recirculation Lines. Subsequent conversations with Mr. Schroeder have identified the following additional changes to the piping dimensions shown on the sketches:

- the horizontal runs containing control valves "NS-1" and "NS-2" will need to be shortened by approximately 18.5" from the dimensions shown on the sketches
- the above change will result in a corresponding 18.5" increase in the length of the horizontal runs beyond the first riser

These changes are necessary to avoid interferences in the field.

SARGENT & LUNDY
ENGINEERS
CHICAGO

Based on an evaluation of existing stress margins and adjacent support capacities, the changes will have no adverse effect on the current analysis results. The dimension changes discussed above are acceptable; however, the locations of the supports near the risers ("NS-8" and "NS-9") and the supports near the control valves (DB3-H207 and DB3-H208) must be maintained at or near the dimensions shown on the sketches (relative to the risers and control valves).

Calculations justifying the above conclusions will be documented in Addendum A to the base stress analysis report (Subsystem 1DD3BC-2", Auxiliary Feedwater, Accession No. 100070, Revision 01, EMD Accession No. 066934).

Should you have any questions, please call me at (312) 269-6504.

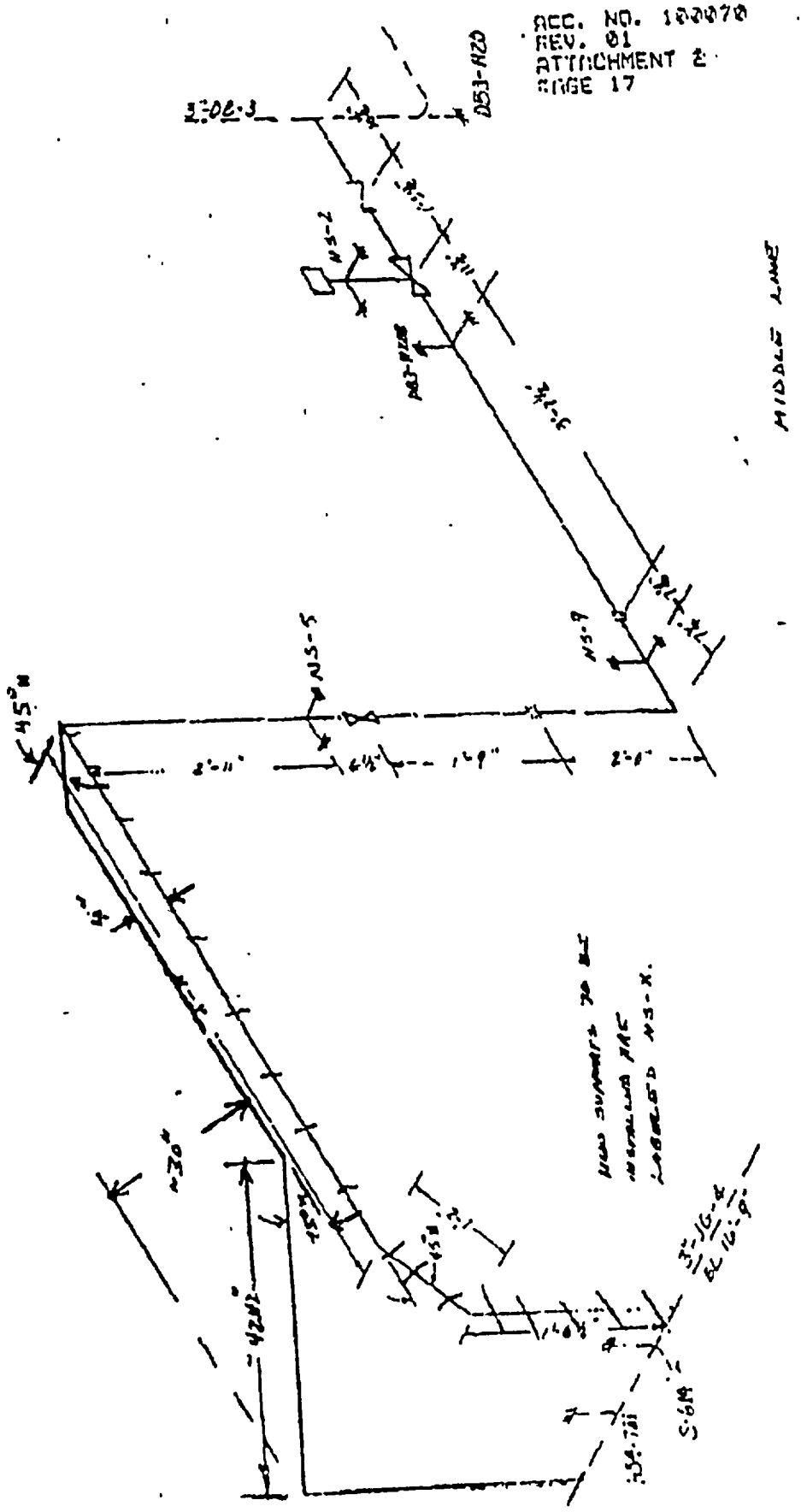
Yours truly,

G. Z. Tokarski
Systems Project Engineer

Attachment
Copies:
M. A. Reniori
A. Reiner
B. E. Lunde
G. T. Kitz
A. W. Szechowycz
D. E. Olson
R. Madugula

ACC. NO. 180070
REV. 01
ATTACHMENT 2
PAGE 17

AUXILIARY FEEDWATER RECIRCULATION LINE MODIFICATION
SK-AFW-009/88-099



Wisconsin Electric POWER COMPANY

231 W Michigan, PO. Box 2046, Milwaukee, WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-056

Mod # 88-099*B

Responsible Engineer: J. A. Schreder

System: AFW

QA Scope [X] Yes [ ] No — portions of Mod are QA

Equipment: P38A and P38B Mini-Recirc Lines

Reference Documents: Drawings SK-AFW-008/88-099 & SK-AFW-009/88-099

Problem Description and Proposed Change:

The locations specified for the new supports for the vertical portion of both P38A and P38B mini-recirc lines are too close to existing HILTI bolts. The separation criteria between HILTI bolts can not be met if the supports DB3A-10036 and DB3A-20036 are installed per the Drawings referenced above.

Attachments: [ ] Yes [X] No

Initiated By/Date: John A. Schreder 9/5/91

Preliminary Approval By/Date: N/A

Resolution Needed by: Date:

Resolution:

The two mentioned supports may be relocated as described in the attached sheet written by Sargent and Lundy engineer Kent Mixer. The relocation of these supports as described on the attached sheet does not adversely impact the piping analysis done for the mod. The piping analysis/report will be updated after mod installation.

Attachments: [X] Yes [ ] No

Change Required:

___ Specs: _____

___ Procedures: _____

X Drawings: SK-AFW-008/88-099 SK-AFW-009/88-099

___ Other: (recirc after mod installation)

Design Verification Required: [ ] Yes [X] No

Completed: Date:

MR Addendum Required: [ ] Yes [X] No

Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No

Completed: Date:

Resolution By/Date: John A. Schreder 9/5/91

Responsible Engineer Review/Date: John A. Schreder 9/5/91

QA Review By/Date: [illegible] 9-5-91

Group Head Approval/Date: [illegible] 9-5-91

Additional Reviews By/Date:

Implementation Completed By/Date:

Form QP 3-4.1
Rev 1

9-5-91

TO: J. SCHROEDER (WEPCO)

FROM: K. MIXER (S&L)

SUBJECT: RESOLUTION OF ANCHOR LOCATIONS FOR SUPPORTS DB3A-1003G & DB3A-2003G

REFERENCES: 1) P38A AUX. FEEDWATER PUMP ON DWG. SK-AFW-008/88-099

2) P38B AUX. FEEDWATER PUMP ON DWG. SK-AFW-009/88-099

ACCEPTABLE RESOLUTIONS:

1) ALLOW SUPPORT DB3A-1003G TO BE RELOCATED DOWN BETWEEN 2 5/8" & 4 5/8" FROM THE CURRENT DESIGN LOCATION.

2) ALLOW SUPPORT DB3A-2003G TO BE RELOCATED UP BETWEEN 1 5/8" & 3 5/8" FROM THE CURRENT DESIGN LOCATION.

Ken Mixer (S&L)
9-5-91

Wisconsin Electric POWER COMPANY

231 W Michigan, PO Box 2046 Milwaukee WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-057

Mod # 88-099*B

Responsible Engineer: J.A. Schroeder

System: Aux Feed Water

QA Scope: Portions of Mod are QA [X] Yes [ ] No

Equipment: AFW Mini Recirc Flow Indicators FIT-04050A & B

Reference Documents:

Problem Description and Proposed Change:

Propose rerouting cable and conduit supplying 120 VAC to the flow indicators to reduce installation time during the 7 day ~~diesel outage~~ LCR 2MS. Both indicators will still be supplied from Panel 7L, breaker 25. No additional weight will be added to any existing ~~rotary~~ raceway and the new conduit will be seismically mounted to meet the 2 over 1 criteria.

Attachments: [ ] Yes [ ] No

Initiated By/Date: [signature] 9/5/91

Preliminary Approval By/Date:

Resolution Needed by: Date:

Resolution: Per above, install a junction box and terminal strip in the conduit run supplying the receptacle in the P-38A cubicle. From this junction box power can then be routed to the existing receptacle and to TB 141 (FIT-04050A). This will significantly reduce the amount of new conduit to be installed. The power supply is non-safety related and the seismic concerns are addressed as in the original design.

Attachments: [ ] Yes [X] No

Change Required:

__ Specs: _____

__ Procedures: _____

[X] Drawings: SK-AFW-012/88-099, SK-AFW-011/88-099

__ Other: _____

Design Verification Required: [ ] Yes [X] No
Completed: Date:

MR Addendum Required: [ ] Yes [X] No
Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No
Completed: Date:

Resolution By/Date: [signature] 9/5/91

Responsible Engineer Review/Date: [signature] 9/5/91

QA Review By/Date: [signature] 9-5-91

Group Head Approval/Date: [signature] 9-5-91

Additional Reviews By/Date: NA

Implementation Completed By/Date: [signature] 9/6/91

Form QP 3-4.1
Rev. 1

Wisconsin Electric POWER COMPANY

231 W Michigan PO Box 2046, Milwaukee, WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-061

Mod # 88-099+B

Responsible Engineer: John A. Schroeder

System: AF

QA Scope ☒ Yes ☐ No

Equipment: Wiring To AF-4014

Reference Documents: IWP 88-099+B2

Problem Description and Proposed Change:

Using the existing conduit and last junction box prior to valve AF-4014, the wiring for the solenoid valve and limit switches on AF-4014 will not reach their termination points.

Attachments: ☐ Yes ☒ No

Initiated By/Date: John A Schroeder

Preliminary Approval By/Date: N/A

Resolution Needed by: Date: N/A

Resolution:

Shorten the last run of conduit and move the last junction box leading to valve AF-4014 by several feet so the wiring will reach it's destination. Mount the components seismically and work per Spec. PB-220 Perform during electrical work for IWP 88-099+B2

Attachments: ☐ Yes ☒ No

Change Required:

___ Specs: _____

___ Procedures: _____

___ Drawings: _____

___ Other: _____

Design Verification Required: ☐ Yes ☒ No

Completed: Date:

MR Addendum Required: ☐ Yes ☒ No

Completed: Date:

10CFR50.59 Evaluation Required: ☐ Yes ☒ No

Completed: Date:

Resolution By/Date: John A Schroeder 9/17/91

Responsible Engineer Review/Date: John A. Schroeder 9/17/91

QA Review By/Date: DPW FOR JCA 9/17/91

Group Lead Approval/Date: WSL 9/17/91

Additional Reviews By/Date: N/A

Implementation Completed By/Date:

Form QP 3 4 1
Rev. 1

Wisconsin Electric POWER COMPANY

231 W Michigan PO Box 2046 Milwaukee WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-062

Mod # 88-099*B

Pesponsible Engineer: John A. Schneider

System: AF

QA Scope [X] Yes [ ] No

Equipment: P3*B Main Recirc Line Support DB3A-2001G

Reference Documents: Drawing FBA-1070 Sh 4 FWP 88-099*B2

Problem Description and Proposed Change:

One of the HILTI bolts for support DB3A-2001G can not be installed without violating the minimum separation criteria between HILTI bolts. A 3/4" HILTI Kwik Bolt I exists in the wall for support DB3-H208 that is within the 8" separation distance for Kwik bolt I's. The HILTI bolt for support DB3A-2001G can be installed 7" from the existing 3/4" HILTI without hitting rebar if the separation criteria can be relaxed to 7".

Attachments: [ ] Yes [X] No

Initiated By/Date: John A. Schneider 9/18/91

Preliminary Approval By/Date: N/A

Resolution Needed by: Date: N/A

Resolution:

Sargent and Lundy has reviewed the loading and capacity of the subject HILTI bolts and has determined that a 7" separation distance will not degrade the seismic adequacy of the piping.

The ½" HILTI Kwik bolt II for support DB3A-2001G can be installed using a minimum separation distance of 7" from the existing 3/4" HILTI Kwik bolt I which is installed on support DB3-H208.

Attachments: [ ] Yes [X] No

Change Required:

___ Specs: _____

___ Procedures: _____

___ Drawings: _____

✓ Other: Include this information in the AS-BUILT description for the S&L analysis.

Design Verification Required: [ ] Yes [X] No

Completed: Date:

MR Addendum Required: [ ] Yes [X] No

Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No

Completed: Date:

Resolution By/Date: John A. Schneider 9/18/91

Responsible Engineer Review/Date: John A. Schneider 9/18/91

QA Review By/Date: 9/18/91

Group Head Approval/Date: 9/18/91

Additional Reviews By/Date: N/A

Implementation Completed By/Date:

Form QP 3-4 ;
Rev. 1

Telecopy Cover Sheet

SARGENT & LUNDY

Please Print In Black Ink Only

Date: 09-19-91

Project No.: 8992 00

Work Group No.: 211

To: J. SCHROEDER

Telecopy Phone No.: 414 755 2321 X 233

Company Name: WISCONSIN ELECTRIC City: POINT BEACH State: WI

From: G. TOKARSKI Ext.: 6504 Loc.: 22013

Cover Sheet Plus 1 Page(s)

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F0379.001 04-89

John,

Here is revised note. Please send sketches so I can complete my calculation.

Thanks,

George Tokarski

PER CONVERSATIONS WITH J. SCHROEDER OF WE ON 9-18-91 THE FOLLOWING INSTALLATION DEVIATIONS HAVE BEEN IDENTIFIED ON SUBSYSTEM 1DD3BC-2" (AUX. FW RECIRC LINE TO CONDENSATE STORAGE TANK)

1. MIN. ~~SEPARATION~~ BETWEEN ANCHOR BOLTS ON SUPPORTS DB3A-2001G & DB3-#208 IS 7".

2. THE L2x2x1/4 ANGLE ON SUPPORT "NS-9" ON THE MIDDLE RECIRC LINE (REF. REPORT WE-100070) IS NOT WELDED TO CENTER OF PLATE (APPROX 0.6" OFF CENTER).

3. "3" MIN." DIMENSION ON DRAWING FOR SUPPORT "NS-9" IS 2 7/8".

BASED ON A REVIEW OF THE EXISTING CALCULATIONS FOR THE ~~ABOVE~~ SUPPORTS, THE DEVIATIONS ARE ACCEPTABLE BASED ON ENGINEERING JUDGEMENT DUE TO THE EXISTING MARGINS ON THE COMPONENTS.

NOTE THAT A FORMAL EVALUATION CONSIDERING THE CUMULATIVE EFFECTS OF ALL DEVIATIONS ON THIS SYSTEM WILL NEED TO BE PERFORMED & DOCUMENTED IN AN AS-BUILT ADDENDUM TO THE APPLICABLE REPORTS ~~AFTER~~ RECEIPT OF COMPLETE AS-BUILT INFO BY S&C.

— George Tokarski
09-18-91

Wisconsin Electric POWER COMPANY

231 W Michigan, PO Box 2046, Milwaukee, WI 53201

NUCLEAR POWER DEPARTMENT
ENGINEERING CHANGE REQUEST

ECR # PB-91-063

Mod # 88-099*B

Responsible Engineer: John A. Schroeder

System: AF

QA Scope [X] Yes [ ] No

Equipment: P38B Mini-Recirc Line Support DB3A-2002G

Reference Documents: Drawing PBA-1070 sheet 5 ; IWP 88-099*B2

Problem Description and Proposed Change:

In order to avoid rebar when installing the HILTI bolts for support DB3A-2002G the location of the base plate ended up being approximately 1" higher than it should have been. Since the base plate is at a higher location the angle can not be installed at the horizontal center (± 1/4") as required on Drawing PBA-1070 sheet 5. The angle can be installed with its top face at the horizontal center which makes the distance from the center of the plate to the centroid of the angle approx. 5/8".

Attachments: [X] Yes [ ] No

Initiated By/Date: John A. Schroeder 9/18/91

Preliminary Approval By/Date: N/A

Resolution Needed by: Date: N/A

Resolution:

Allow the top face of the angle iron to be installed at the horizontal centerline of the baseplate and allow a 2-7/8" minimum hilty hole to baseplate centerline distance. The above proposed change has been discussed with Sargent and Lundy and it has been determined that these changes will not degrade the seismic adequacy of the piping.

Attachments: [ ] Yes [X] No

Change Required:

___ Specs: _____

___ Procedures: _____

✓ Drawings: PBA-1070 sheet 5 to be as-built

✓ Other: Include this information in the as-built S&L analysis.

Design Verification Required: [ ] Yes [X] No

Completed: Date:

MR Addendum Required: [ ] Yes [X] No

Completed: Date:

10CFR50.59 Evaluation Required: [ ] Yes [X] No

Completed: Date:

Resolution By/Date: John A. Schroeder 9/18/91

Responsible Engineer Review/Date: John A. Schroeder 9/18/91

QA Review By/Date: [signature] 9-18-91

Group Head Approval/Date: WJS for me 9/18/91

Additional Reviews By/Date: N/A

Implementation Completed By/Date:

Form QP 3-4.1
Rev. 1

Problem Description Cont. Sheet 2

In addition, the lower HILTI hole is only 2-7/8" from the horizontal centerline of the plate when the drawing calls for a 3" minimum distance

Telecopy Cover Sheet

SARGENT & LUNDY

Please Print In Black Ink Only

Date: 09-19-91

Project No.: 8992 00

Work Group No.: 211

To: J. SCHROEDER

Telecopy Phone No.: 414 755 2321 X 233

Company Name: WISCONSIN ELECTRIC City: POINT BEACH State: WI

From: G. TOKARSKI Ext.: 6504 Loc.: 22013

Cover Sheet Plus 1 Page(s)

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F0379.001 04-89

John,

Here is revised note. Please send sketches so I can complete my calculation.

Thanks

George Tokarski

PER CONVERSATIONS WITH. J. SCHRODER OF WE ON 9-18-91 THE FOLLOWING INSTALLATION DEVIATIONS HAVE BEEN IDENTIFIED ON SUBSYSTEM 1DD3BC-2" (AUX. FW RECIRC LINE TO CONDENSATE STORAGE TANK)

1. MIN. ~~SEPARATION~~ BETWEEN ANCHOR BOLTS ON SUPPORTS DB3A-2001G & DB3-H208 IS 7".

2. THE L2x2x1/4 ANGLE ON SUPPORT "NS-9" ON THE MIDDLE RECIRC. LINE (REF. REPORT. WE-100070) IS NOT WELDED TO CENTER OF PLATE (APPROX 0.6" OFF CENTER).

3. "3" MIN." DIMENSION ON DRAWING FOR SUPPORT "NS-9" IS 2 7/8".

BASED ON A REVIEW OF THE EXISTING CALCULATIONS FOR THE ABOVE SUPPORTS, THE DEVIATIONS ARE ACCEPTABLE BASED ON ENGINEERING JUDGEMENT DUE TO THE EXISTING MARGINS ON THE COMPONENTS.

NOTE THAT A FORMAL EVALUATION CONSIDERING THE CUMULATIVE EFFECTS OF ALL DEVIATIONS ON THIS SYSTEM WILL NEED TO BE PERFORMED & DOCUMENTED IN AN AS-BUILT ADDENDUM TO THE APPLICABLE REPORTS AFTER RECEIPT OF COMPLETE AS-BUILT INFO BY S/C.

— George Tokarski
09-18-91

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS (MONTHLY) UNITS 1 AND 2

Date 9/19/91
DSS

1.0 PURPOSE

1.1 The purpose of this test is to perform the following periodic inservice tests as required by Technical Specifications and/or the ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components."

1.1.1 Monthly functional test of the electric-driven auxiliary feed pumps as required by Technical Specification 15.4.8.1.a.

1.1.2 Monthly full stroke test of the auxiliary feed pumps service water suction valves, AF-4009 and AF-4016, as required by Technical Specification 15.4.8.1.c.

1.1.3 Monthly full stroke test of the auxiliary feed pump discharge valves, AF-4020, AF-4021, AF-4022 and AF-4023, as required by Technical Specification 15.4.8.1.c.

1.1.4 Quarterly partial exercise test of auxiliary feed pump suction check valves, AF-112 and AF-113, as required by ASME Section XI.

1 1.5 Quarterly full stroke test of AF-39 and AF-52, pump suction valves from the CST, as required by ASME Code Section XI.

1.2 To perform a annual test of the heat transfer capability of the cooling water supply to the auxiliary feedwater pumps by recording bearing temperatures. Reference response to NRC generic letter 89-13.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 If there is any problem in performing this test, immediately notify the duty shift superintendent. Operation of this equipment is a Technical Specification requirement.

2.2 Do not perform more than one portion of this test at a time.

2.3 This test shall not be performed unless the auxiliary feedwater system capability satisfies the requirements of Technical Specifications for both units. Notify the manager - Operations if this test cannot be performed.

2.4 To prevent injecting excessive amounts of service water into the auxiliary feed system, condensate storage tank, or steam generator, when the steam generator is less than 100 psig, ensure the associated pump discharge pressure control valve and manual recirc isolation is closed when cycling the associated service water supply valve.

2.5 Low suction pressure condition causes a common suction pressure alarm, and a low suction pressure trip with an attendant alarm and a trip-enabled light. This trip is reset by placing the control switch for the tripped pump to "PULL-OUT" and then returned to the desired position. The trip-enabled light being extinguished verifies the trip has reset.

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

2.6 Technical Specifications prohibit the testing of a safeguards component if the opposite train's diesel generator is out-of-service.

2.7 If at any time pump suction pressure is less than the NPSH required, this test must be discontinued until problem is corrected.

3.0 INITIAL CONDITIONS — INITIALS

3.1 This test is being done to satisfy:

____ The normally scheduled call-up. Task sheet No.____.

____ Post-maintenance operability test for ____ (equip. ID)

MWR No.(s)____
Task Sheet No.(s)____

✓ Special test - no numbers

Explain: PER TWP 88-099 B2

3.2 Auxiliary feed system lined up for critical operation per CL-13E. GDS

3.3 Both diesel generators G01 and G02 are in service or the component(s) to be tested are in the same train as the diesel that is out-of-service. GDS

3.4 Defeat the blowdown isolation interlock for both units, using the key switch, if required. GDS

3.5 Assemble the following portable test instruments and log their ID numbers on Attachment A.

3.5.1 Stop watch (✓)

3.5.2 Vibration monitor (✓)

3.5.3 Temperature indicator (✓) GDS

3.6 **Permission to Perform Test**

The conditions required by this test are consistent with required plant conditions including equipment operability. Permission is granted to perform this test.

DSS _____ TIME 2100 DATE 9/19/91

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS (MONTHLY) UNITS 1 AND 2

INITIALS

4.0 PROCEDURE

NOTE: If the requirements of IT-102 need to be satisfied, follow IT-10 while signing off duplicate steps in IT-102.

NOTE: When performing post-maintenance testing or operability checks when only one train requires testing, omit steps:

4.18 through 4.34 when testing "A" train only
4.1 through 4.17 when testing "B" train only

Train "A"

4.1 Shut P-38A discharge valves, AF-4022 and AF-4023. N/A GDS

NOTE: When performing post-maintenance testing or operability checks of the pumps only, omit Steps 4.2.1 through 4.2.16

4.2 Test AF-4009, P-38A service water suction valve, as follows:

4.2.1 Verify the following valves are shut:

a. SS-176, 1P-29 and P-38A suction sample xconn. N/A GDS

b. SS-178, P-38A and P-38B suction sample xconn. N/A GDS

4.2.2 Place control switch for P-38A in pullout. N/A GDS

4.2.3 Unlock and shut P-38A manual suction valve AF-39. N/A GDS

4.2.4 Unlock and shut P-38A recirc line manual isolation valve AF-27. N/A GDS

4.2.5 Put PC-4012 in manual mode and shut AF-4012. N/A GDS

4.2.6 Open P-38A service water suction upstream drain, AF-38A. When the drain shows clear water, shut AF-38A. N/A GDS

4.2.7 Open AF-4009. N/A GDS

4.2.8 Open P-38A suction drain, AF-38. N/A GDS

4.2.9 When the drain shows clear water, shut AF-4009. N/A GDS

4.2.10 Open and lock P-38A manual suction valve, AF-39. N/A GDS

AF-39 Lock No.____(LO)

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

			INITIALS
4.2.11	Flush the service water form the suction header via drain valve AF-38. When the flush is complete, shut AF-38.		N/A GDS
4.2.12	Fill and vent P-38A suction piping		
	a.	Verify AF-35B, P-38A suction sample valve OPEN.	N/A GDS
	b.	Crack open SS-173, P-38A suction sample vent	N/A GDS
	c.	When all the air is vented from the suction line then shut SS-173, suction sample vent.	N/A GDS
4.2.13	Open and lock P-38A manual recirc isolation valve AF-27.		
	AF-27 Lock No._____(LO)		N/A GDS
4.2.14	Place the control switch for P-38A in auto.		N/A GDS
4.2.15	Verify LO suction pressure trip for P-38A has reset.		N/A GDS
4.2.16	Put PC-4012 in the auto mode and set for 1200 psig.		N/A GDS
4.3	Check P-38A pump bearing oil level between the red lines on the glass.	Inboard	N/A GDS
		Outboard	N/A GDS
4.4	Valve in pump suction pressure gauge PI-4010A. Record suction pressure on Attachment A.		N/A GDS
4.5	Start P-38A. Time Start_____		N/A GDS
4.6	Verify P-38A suction pressure is ≥4.8 psig.		N/A GDS
4.7	Check mini-recirculation valve AF-4007 open.		N/A GDS
4.8	Check mini-recirculation flow ≥70 gpm on FI-4050A and record on Attachment A.		N/A GDS
4.9	Check the packing glands for excessive leakage or overheating.		N/A GDS
4.10	Check pump and motor for unusual noise or overheating.		N/A GDS
4.11	After a five-minute run time, record the data on Attachment A. See Note 2 for pump run time requirements when taking bearing temperature readings.		N/A GDS
4.12	Isolate and vent pump suction pressure gauge PI-4010A.		N/A GDS

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

INITIALS

4.13 Secure P-38A and observe its coastdown behavior for unusual noises, vibrations, or other abnormal conditions. Note results on Attachment A.
Time stop _____ N/A GDS

NOTE: If Unit 1 is in a cold shutdown or refueling condition AF-4023 should remain shut. If Unit 2 is in a cold shutdown or refueling condition AF-4022 should remain shut.

4.14 Open AF-4022. (This step is N/A if note above applies.) N/A GDS

4.15 Open AF-4023. (This step is N/A if note above applies.) N/A GDS

4.16 Second independent operator perform the following valve lineup verification for Train "A".

		Position	
AF-39	P-38A suction isolation	LO	N/A GDS
AF-27	P-38A recirc isolation	LO	N/A GDS
AF-4012	P-38A discharge PCV controller	(Auto - 1200 psig)	N/A GDS
AF-4022	P-38A discharge to Unit 2 "A" steam generator	0 *	N/A GDS
AF-4023	P-38A discharge to Unit 1 "A" steam generator	0 *	N/A GDS
AF-4007	P-38A mini-recirc control valve	UG/LH	N/A GDS
	P-38A control switch	Auto	N/A GDS

*The pump discharge valves for a unit in a cold shutdown or a refueling condition should remain shut.

4.17 Check train "A" operability by comparing the test data with the limits in the Operations Standing Order. N/A GDS.

Train "B"

4.18 Shut P-38B discharge valves AF-4020 and AF-4021. RAE

NOTE: When performing post-maintenance testing or operability checks of the pumps only, omit Steps 4.19.1 through 4.19.16.

4.19 Test AF-4016, service water suction for P-38B, as follows:

4.19.1 Verify the following valves are shut:

a. SS-177, 2P-29 and P-38B suction sample xconn. N/A GDS

b. SS-178, P-38A and P-38B suction sample xconn. N/A GDS

4.19.2 Place the control switch for P-38B in pullout. N/A GDS

4.19.3 Unlock and shut manual suction valve AF-52. N/A GDS

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

			INITIALS
	4.19.4	Unlock and shut pump recirc line isolation valve AF-40.	N/A GDS
	4.19.5	Put PC-4019 in the manual mode and shut AF-4019.	N/A GDS
	4.19.6	Open P-38B service water suction upstream drain, AF-51A. When the drain shows clear water, shut AF-51A.	N/A GDS
	4.19.7	Open AF-4016.	N/A GDS
	4.19.8	Open P-38B suction drain AF-51.	N/A GDS
	4.19.9	When the drain shows clear water, shut AF-4016.	N/A GDS
	4.19.10	Open and lock the manual suction valve AF-52. AF-52 Lock No._____(LO)	
	4.19.11	Flush the service water from the suction header via drain valve AF-51. When the flush is complete, shut AF-51.	N/A GDS
	4.19.12	Fill and vent P-38B suction piping.	
		a. Verify AF-48B, P-38B suction sample valve open.	N/A GDS
		b. Crack open SS-175, P-38B suction sample vent.	N/A GDS
		c. When all the air is vented from the suction line then shut SS-175, P-38B suction sample vent.	N/A GDS
	4.19.13	Open and lock the manual recirc isolation valve AF-40. AF-40 Lock No._____(LO)	N/A GDS
	4.19.14	Place the control switch for P-38B in the auto position.	N/A GDS
	4.19.15	Verify LO suction pressure trip for P-38B has reset.	N/A GDS
	4.19.16	Place PC-4019 in the auto mode and set for 1200 psig.	N/A GDS
4.20		Check P-38B pump bearing oil level between the red line on the glass. Inboard Outboard	TMI TMI
4.21		Valve in pump suction pressure gauge PI-4017A. Record suction pressure on Attachment A.	
4.22		Start P-38B. Time Start 2128	TMI

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

		INITIALS
4.23	Verify P-38B suction pressure is ≥4.8 psig.	RAE
4.24	Check mini-recirculation valve AF-4014 open.	RAE
4.25	Check mini-recirculation flow ≥70 gpm on FI-4050B and record on Attachment A.	RAE
4.26	Check packing glands for excessive leakage or overheating.	RAE
4.27	Check the pump and motor for unusual noise or overheating.	RAE
4.28	After a five-minute run time, record the data on Attachment A. See Note 2 for pump run time when taking bearing temperature readings.	RAE
4.29	Isolate and vent P-38B suction pressure gauge PI-4017A.	RAE
4.30	Secure P-38B and observe its coastdown behavior for unusual noises, vibrations, or any other abnormal conditions. Note results in Attachment A.	
	Time Stop 2211	RAE
	NOTE: If Unit 1 is in a cold shutdown or refueling condition AF-4021 should remain shut. If Unit 2 is in a cold shutdown or refueling condition, AF-4020 should remain shut.	
4.31	Open AF-4020. (This step is N/A if note above applies.)	N/A
4.32	Open AF-4021. (This step is N/A if note above applies.)	N/A
4.33	Second independent operator perform the following valve lineup verification for Train "B".	

		Position	
AF-52	P-38B suction isolation	LO	
AF-40	P-38B recirc isolation	LO	
AF-4019	P-38B discharge PCV controller	(Auto - 1200 psig)	
AF-4020	P-38B discharge to Unit 2 "B" steam generator	0 *	
AF-4021	P-38B discharge to Unit 1 "B" steam generator	0 *	
AF-4014	P-38B mini-recirc control valve	UG/LH	
	P-38B control switch	Auto	

*The pump discharge valves for a unit in a cold shutdown or a refueling condition should remain shut.

4.34	Check Train "B" operability by comparing the test data with the limits in the Operations Standing Order.	RAE

INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

INITIALS

4.35 Enable the blowdown isolation interlock for both units by removing the interlock defeat keys, if required. RAE

5.0 ANALYSIS

TO BE COMPLETED WITHIN 96 HOURS BY MANAGER - OPERATIONS OR HIS REPRESENTATIVE.

5.1 Comparisons with allowable ranges of test values and analysis of deviations complete. _____

5.2 Any requirements for corrective action? _____

Yes _____ No _____

(If yes, give details in the remarks section.)

5.3 Data analyzed by _____

Time and date _____

Remarks:

FOR INFORMATION ONLY

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2

ATTACHMENT A

P-38A - "A" MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP

PARAMETER			INSTRUMENT	UNITS	READINGS	
Pump Discharge Pressure			PI-4012	psig	N/A RAT	
Pump Suction Pressure Before Test			PI-4010A	psig		
Pump Suction Pressure During Test			PI-4010A	psig		
Pump Differential Pressure			Note 4	psid		
Pump Vibration	Inboard Bearing	Vertical C	Note 1,6	mils/ips	mils	ips
		Horizontal D	Note 1,6	mils/ips	mils	ips
		Axial E	Note 1,6	mils/ips	mils	ips
	Outboard Bearing	Vertical A	Note 1,6	mils/ips	mils	ips
		Horizontal B	Note 1,6	mils/ips	mils	ips
Bearing Temperature (Note 2)	Pump	Inboard	1 TR-2000	°F		
		Outboard	1 TR-2000	°F		
	Motor	Inboard F	Notes 1, 6	°F		
		Outboard G	Notes 1, 6	°F		
	Ambient Air Temperature		Notes 1, 6	°F		
Condensate Storage Tank Temperature (Note 3)			TI-4045 TI-4046	°F		
Pump Mini-Recirculation Flow			FI-4050A	gpm		
Pump Coastdown Behavior Check (✓) If OK			N/A	N/A		

FOR INFORMATION ONLY

ATTACHMENT A

P-38B - "B" MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP

PARAMETER			INSTRUMENT	UNITS	READINGS	
Pump Discharge Pressure			PI-4019	psig	1310	
Pump Suction Pressure Before Test			PI-4017A	psig	15.35	
Pump Suction Pressure During Test			PI-4017A	psig	15 10	
Pump Differential Pressure			Note 4	psid	1294.9	
Pump Vibration	Inboard Bearing	Vertical C	Note 1, 6	mils/ips	mils .1769	ips .0465
		Horizontal D	Note 1, 6	mils/ips	mils .2428	ips .042
		Axial E	Note 1, 6	mils/ips	mils .1167	ips .0439
	Outboard Bearing	Vertical A	Note 1, 6	mils/ips	mils .3244	ips .1213
		Horizontal B	Note 1, 6	mils/ips	mils .4916	ips .1841
Bearing Temperature (Note 2)	Pump	Inboard	1 TR-2000	°F ①	65.9 / 66. / 65.8	
		Outboard	1 TR-2000	°F ①	65.4 / 65.4 / 65.5	
	Motor	Inboard F	Note 1, 6	°F ②	78 / 79 / 80	
		Outboard G	Note 1, 6	°F ②	77 / 78 / 79	
	Ambient Air Temperature		Note 1, 5	°F	74	
Condensate Storage Tank Temperature (Note 3)			TI-4045 TI-4046	°F	63.5	
Pump Mini-Recirculation Flow			FI-4050B	gpm	88.3	
Pump Coastdown Behavior Check (✓) if OK			N/A	N/A	ok	

PARAMETER	TEST INSTRUMENT ID
Vibration	ICTI-212
Bearing Temperature	① 1TR-2000 B ② MTC # MCDP-001
Ambient Air Temperature	MTC-# MCDP-004
Stopwatch	N/A RAT

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS (MONTHLY) UNITS 1 AND 2

NOTE 1: *Log the identification number of the portable instrument being used.*

NOTE 2: *Readings taken only during the first run of January, after pump maintenance, or when establishing new reference values. These readings will be taken after bearing temperatures have stabilized. "Stabilization" is achieved when:*

a. *Three consecutive temperature readings have been taken at ten-minute intervals.*

and

b. *Each reading is within 3 percent of the other two.*

NOTE 3: *On the data sheet, circle the appropriate temperature indicator. If tanks are cross-connected, use the average of both tanks.*

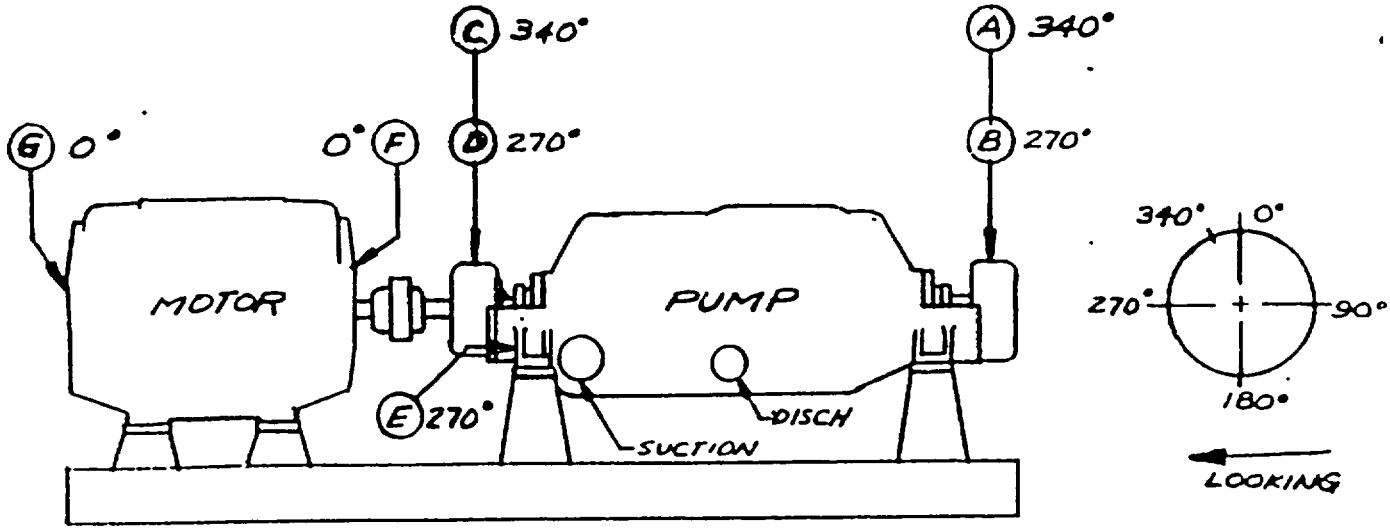
TI-4045	*"A" Tank*
TI-4046	*"B" Tank*

NOTE 4: *Differential pressure = pump discharge pressure - pump suction pressure during test.*

NOTE 5: *Ambient air temperature is taken approximately one foot above the pump inboard bearing.*

NOTE 6: *Vibration reading will be taken at locations A, B, C, D and E, as shown on Figure 1. Temperature readings will be taken at locations F and G, as shown on Figure 1.*

ELECTRICALLY-DRIVEN AUXILIARY FEED PUMPS
(MONTHLY)
UNITS 1 AND 2



ELECTRIC AUXILIARY FEED PUMP

AUXILIARY FEEDWATER SYSTEM

DATA SHEET 13

Scaling: 0-200 "H_2O
0-200 gpm

Channel: DPIS-4014

Description: P38B, AFP Recirculation Flow Controller

Indicator			Tolerance: ±2 gpm
Input "H_2O	Output (gpm)		
	Ideal	Found	Left
0	0		
50	100		
100	141.4		
150	173		
200	200		

Switch			Tolerance: ±2 gpm
Switch Condition	Setpoint (gpm)		
	Ideal	Found	Left
Open↑	~~98~~ 95	New Setpoint	95
Close↓	~~98~~ 75		75

Per approved setpoint change (MR# 88-099)

NOTE: Notify control room that recirc valve may not operate when required due to calibration in progress.

Test Equipment Used: _____

ΔP Instrument Valves - As Left First Check _____ Initials Second Check _____ Initials

High Side _____
Low Side _____
Bypass _____
Drain _____

ADJ. DIFF
0 0 0 0
ADJ. S.P.

Performed by: Jim Quinn Technician Date: 9-19-91

Reviewed by: _____ I&C Supervisor

CKT NO.: FIT-4050B

SCALING: 0-133 "H_2O 4-20 mA 0-120 GPM

DESCRIPTION: P38B RECIRC FLOW

TOL. ±0.6 GPM

	INDICATOR	
INPUT TRANSMITTER "H_2O	OUTPUT (GPM*)	
	IDEAL	FOUND
0	0.00 SPEC.	-0.1
33	59.8	59.6
66	84.5	84.4
99	103.5	103.5
133	120.0	120.1

* PERFORM TRANSMITTER AND INDICATOR CALIBRATION BELOW ONLY IF ABOVE INDICATOR IS FOUND OUT OF SPEC.

TOL. ± 0.08 mA

TOL. ± 0.6 GPM

	TRANSMITTER				INDICATOR		
INPUT	OUTPUT (mA)			INPUT	OUTPUT (GPM)		
"H_2O	IDEAL	FOUND	LEFT	(mA)	IDEAL	FOUND	LEFT
0	4.00			4.00	0		
33	7.97			7.97	59.8		
66	11.94			11.94	84.5		
99	15.91			15.91	103.5		
133	20.00			20.00	120.0		

ΔP Instrument Valves - As Left First Check _____ Initials Second Check _____ Initials

TEST EQUIP. USED:

High Side _____

Low Side _____

Bypass _____

Drain _____

NOTE: TWO MAN CHECK OF AS-LEFT VALVE PO NOT REQUIRED IF THIS PROCEDURE IS PERFORMED DURING A REFUELING OUTA REFUELING: YES ____ NO ____

TECHNICIAN	DATE
Jim Quinn	19-19-91

APPROVED BY

I&C Supervisor

POINT BEACH NUCLEAR PLA

F L O - M A X, I N C.
P. O. BOX 6187
KINGWOOD, TX 77325
(713) 987-8631 (800) 426-9156 FAX (713) 987-2930

FLOCURVE (tm) Program 5200.03
FLOW VERSUS DIFFERENTIAL PRESSURE

CUSTOMER---------- SERVICE METAL PRODUCTS
CUSTOMER ORDER------ 80306OH ADD 1
SHOP ORDER---------- 910808
DATE---------------- 04/25/91
TAG----------------
FLUID--------------- WATER
ELEMENT------------- ORIFICE PLATE
PIPE ID------------- **********1.9390 INCHES
BORE---------------- **********1.5206 INCHES
MAX FLOW------------ ********120.0000 GPM
MAX DIFF------------ ********133.0000 IN WC

FLOW GPM	%	DIFF IN WC	FLOW GPM	%	DIFF IN WC	FLOW GPM	%	DIFF IN WC
120.0000	100	133.0000	82.8000	69	63.3213	45.6000	38	19.2052
118.8000	99	130.3533	81.6000	68	61.4992	44.4000	37	18.2077
117.6000	98	127.7332	80.4000	67	59.7037	43.2000	36	17.2368
116.4000	97	125.1397	79.2000	66	57.9348	42.0000	35	16.2925
115.2000	96	122.5728	78.0000	65	56.1925	40.8000	34	15.3748
114.0000	95	120.0325	76.8000	64	54.4768	39.6000	33	14.4837
112.8000	94	117.5188	75.6000	63	52.7877	38.4000	32	13.6192
111.6000	93	115.0317	74.4000	62	51.1252	37.2000	31	12.7813
110.4000	92	112.5712	73.2000	61	49.4893	36.0000	30	11.9700
109.2000	91	110.1373	72.0000	60	47.8800	34.8000	29	11.1853
108.0000	90	107.7300	70.8000	59	46.2973	33.6000	28	10.4272
106.8000	89	105.3493	69.6000	58	44.7412	32.4000	27	9.6957
105.6000	88	102.9952	68.4000	57	43.2117	31.2000	26	8.9908
104.4000	87	100.6677	67.2000	56	41.7088	30.0000	25	8.3125
103.2000	86	98.3668	66.0000	55	40.2325	28.8000	24	7.6608
102.0000	85	96.0925	64.8000	54	38.7828	27.6000	23	7.0357
100.8000	84	93.8448	63.6000	53	37.3597	26.4000	22	6.4372
99.6000	83	91.6237	62.4000	52	35.9632	25.2000	21	5.8653
98.4000	82	89.4292	61.2000	51	34.5933	24.0000	20	5.3200
97.2000	81	87.2613	60.0000	50	33.2500	22.8000	19	4.8013
96.0000	80	85.1200	58.8000	49	31.9333	21.6000	18	4.3092
94.8000	79	83.0053	57.6000	48	30.6432	20.4000	17	3.8437
93.6000	78	80.9172	56.4000	47	29.3797	19.2000	16	3.4048
92.4000	77	78.8557	55.2000	46	28.1428	18.0000	15	2.9925
91.2000	76	76.8208	54.0000	45	26.9325	16.8000	14	2.6068
90.0000	75	74.8125	52.8000	44	25.7488	15.6000	13	2.2477
88.8000	74	72.8308	51.6000	43	24.5917	14.4000	12	1.9152
87.6000	73	70.8757	50.4000	42	23.4612	13.2000	11	1.6093
86.4000	72	68.9472	49.2000	41	22.3573	12.0000	10	1.3300
85.2000	71	67.0453	48.0000	40	21.2800	10.8000	9	1.0773
84.0000	70	65.1700	46.8000	39	20.2293	9.6000	8	0.8512

POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

*Unit P-2 *Piping class DB-3
*System / Component AF/P38B Recirc Line
*Design Press 1440 *Design Temp 100
Test Press
TARGET TEST PRESS 2160 TEST TEMP AMB
*MWR/SMP/IWP IWP 88-099*B2
*Other Reference

*Test Type: Hydro X
Pneum
Other (Specify)

*Reference Code: ASME III
B31.1.0 Y
NFPA

Components/equipment within test boundary have been reviewed for pressure/temperature limits JAS (Initials)

*Test Variance or Special Analysis/Consideration Required: YES / (NO)

Description:

Resolution/Comments:

ISI Engineer Date

*Pretest Director John F. Schroeder Date 8/24/91

INSTRUMENTATION

Temperature Device ID:
Test Press Gage ID: PG-11
Test Press Gage Range: 0-5000 (Range shall be 1.5-4.0 times test press)

*Ops Coordinator Review T.J. Kamyszek Date 9-18-91

PRETEST CALIBRATION

Cal. Equip ID: TI-131
I&C Technician:
Date: 9-19-91

Ideal	As-Left
2100	2100
2150	2150
2200	2200

POST-TEST CALIBRATION

Cal. Equip. ID: TI-131
I&C Technician: Brian G. Nee
Date: 9-22-91

As-Found
2100
2150
2200

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

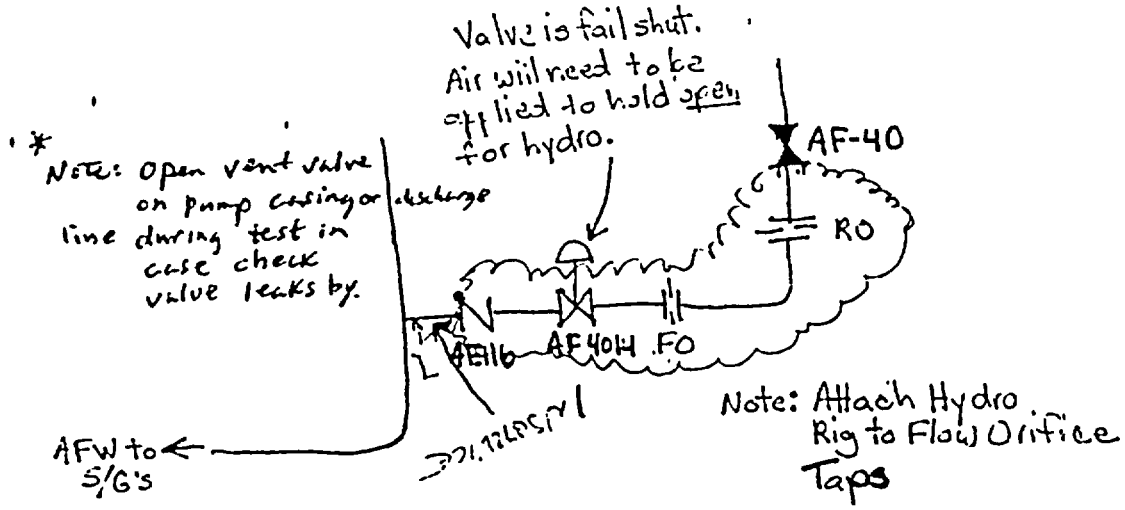
Target Test Pressure 2160
*System Temperature Ambient
*Test Pressure 2160 /
Maximum Pressure 2162 /
Minimum Pressure 2158 /

Tolerance + 50/00 psig - 100/100 psig
*At Test Pressure 2004 Time
Hold Time Complete 2014 Time
*Test Complete 2022 Time
Test Operator D.K. Dittrich Date 9/19/91

CAUTION: Independent Verification of Restoration per PBNP 3.1.1 may be needed.

Test Director Date 9/19/91
Ops Coordinator Review T.J. Kamyszek Date 9-25-91
QAC Review Date 10/2/91
Comments

* . Indicates data entry for initial service leak test



* Note: Open vent valve on pump casing or discharge line during test in case check valve leaks by.

POINT BEACH NUCLEAR PLANT

HYDROSTATIC/PNEUMATIC TEST CALCULATION SHEET

Piping Class/System/Component DB-3

NOTE: The letters "A" through "P" used in calculations are previous step designators. Use the value obtained in the indicated step.

A. *Design Pressure = Pd	1440 psig
B. *Design Temperature = Td	100 deg F
Z = multiplier determined from Table 2 of PBNP 3.2.5	Z = 1.5
C. *Test Pressure = Z x A	2160 psig
D. *Test Gage Range = 1.5 x C	3240 psig
= 4.0 x C	8640 psig
E. *Temporary Relief Valve Setpoint = 1.10 x C	2376 psig
F. Lowest System Elevation	~10' ft
G. Highest System Elevation	~15' ft
H. Test Gage Elevation	10' ft
I. Elevation Correction = 0.43 x (G − H)	2.15 psig
J. Adjusted Test Pressure = C + I	2162 psig
K. Additional Low Point Pressure = 0.43 x (H − F)	0 psig
L. Low Point Pressure = J + K (for gage above low point) If K is less than zero, enter zero for L.	N/A psig
M. Maximum Low Point Pressure = 1.06 x C If L > M, notify the ISI Engineer	2290 psig
N. System Insulated (Circle one)	YES / (NO)
O. *Pressure Hold Time (See Table 2 for hold times)	10 (min)/hr
P. *Rounded Adjusted Test Pressure, Step 8.1.8 (Enter on EQR-42 as Target Test Pressure)	2160 psig

Comments / Notes:

Performed by: Eric Erdman Date 7-15-91

Reviewed by: Jack T. Schneider Date 8/24/91

* - applicable to pneumatic tests.

POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

*Unit PBO *Piping class JG-4 *System / Component AFW Recirc / P38B *Design Press +50 *Design Temp 100 Test Press 75 TARGET TEST PRESS 80 TEST TEMP AMB *MWR/SMP/IWP IWP 88-099B *Other Reference	*Test Type: Hydro X Pneum Other (Specify) *Reference Code: ASME III B31.1.0 X NFPA

Components/equipment within test boundary have been reviewed for pressure/temperature limits ________ (Initials)

*Test Variance or Special Analysis/Consideration Required: YES / (NO)

Description:

Resolution/Comments:

ISI Engineer Date

*Pretest Director John A. Schroeder Date 8/24/91

INSTRUMENTATION

Temperature Device ID: Test Press Gage ID: OT6 #3
Test Press Gage Range: 0-200 PSI (Range shall be 1.5-4.0 times test press)

*Ops Coordinator Review J J Kaczmarczyk Date 9-18-91

PRETEST CALIBRATION / POST-TEST CALIBRATION

Cal. Equip ID: TI-9 I&C Technician: Mark Clark Date: 9-18-91	Ideal	As-Left	Cal. Equip. ID: TI-9 I&C Technician: Mike Burcham Date: 9-19-91	As-Found
	~~70~~ 75	~~70~~ 75		75
	~~75~~ 80	~~75~~ 80		80
	~~80~~ 85	~~80~~ 85		85

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

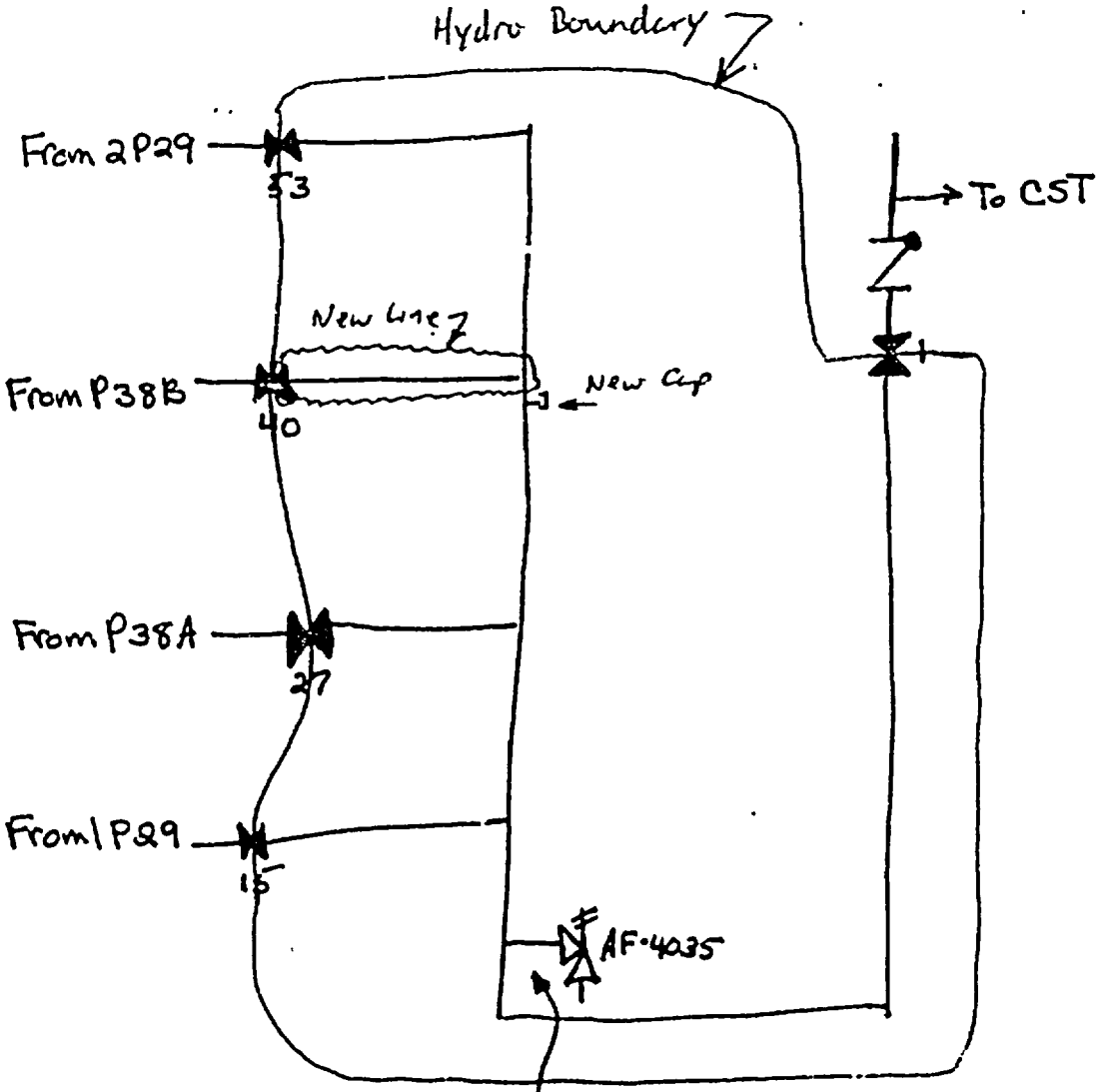
Target Test Pressure 80	Tolerance + 2 psig - 4 psig
*System Temperature 62°F	*At Test Pressure 0632 Time
*Test Pressure 80 /	Hold Time Complete 0642 Time
Maximum Pressure 78 /	*Test Complete 0645 Time
Minimum Pressure 78 /	Test Operator [signature] Date 9/18/91

CAUTION: Independent Verification of Restoration per PBNP 3.1.1 may be needed.

Test Director [signature] Date 9/18/91
Ops Coordinator Review J J Kaczmarczyk Date 9-20-91
QAC Review [signature] Date 10/10/91
Comments

* - Indicates data entry for initial service leak test.

PBF 0012
(06-90)



Remove relief valve and connect hydro pump here. Reinstall relief valve after hydro using a new 2" flexitallic gasket obtained from stock. Torque nuts to 60 ft-lbs using a staggered pattern.

John A. Schneider
8/16/91

POINT BEACH NUCLEAR PLANT

HYDROSTATIC/PNEUMATIC TEST CALCULATION SHEET

Piping Class/System/Component JB-4/AFW Recirc/P38B

NOTE: The letters "A" through "P" used in calculations are previous step designators. Use the value obtained in the indicated step.

A. *Design Pressure = Pd	50 psig
B. *Design Temperature = Td	100 deg F
Z = multiplier determined from Table 2 of PBNP 3.2.5	Z = 1.5
C. *Test Pressure = Z x A	75 psig
D. *Test Gage Range = 1.5 x C	113 psig
= 4.0 x C	300 psig
E. *Temporary Relief Valve Setpoint = 1.10 x C	83 psig
F. Lowest System Elevation	10 ft
G. Highest System Elevation	20 ft
H. Test Gage Elevation	10 ft
I. Elevation Correction = 0.43 x (G − H)	4.3 psig
J. Adjusted Test Pressure = C + I	79.3 psig
K. Additional Low Point Pressure = 0.43 x (H − F)	0 psig
L. Low Point Pressure = J + K (for gage above low point) If K is less than zero, enter zero for L.	79.3 psig
M. Maximum Low Point Pressure = 1.06 x C If L > M, notify the ISI Engineer	79.5 psig
N. System Insulated (Circle one)	YES / (NO)
O. *Pressure Hold Time (See Table 2 for hold times)	10 min/hr
P. *Rounded Adjusted Test Pressure, Step 8.1.8 (Enter on EQR-42 as Target Test Pressure)	80 psig

Comments / Notes: _____

Performed by: Julie Pederson Date 8-5-91

Reviewed by: [signature] Date 8/24/91

* = applicable to pneumatic tests.

POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

•Unit PBO •Piping class DB-3
•System / Component AF/P38B Mini Recirc Piping
•Design Press 1440 •Design Temp 100
Test Press
TARGET TEST PRESS TEST TEMP AMB
•MWR/SMP/IWP 88-099 # B2
•Other Reference

•Test Type: Hydro
Pneum
Other (Specify) X Initial Service Leak Test

•Reference Code: ASME III
B31.1.0 X
NFPA

Components/equipment within test boundary have been reviewed for pressure/temperature limits TAS (Initials)

•Test Variance or Special Analysis/Consideration Required: (YES) NO

Description: Impractical to hydro pump (see reverse side).

Resolution/Comments: Perform surface exam on all new welds and an initial service leak test. This section is not isolatable.

ISI Engineer James T. [illegible] for G. R. Sherwood Date 6 Sept. 1991

•Pretest Director John A. Schroeder Date 8/24/91

INSTRUMENTATION

Temperature Device ID: MCDP 001
Test Press Gage Range:
Test Press Gage ID: PI-4019
(Range shall be 1.5-4.0 times test press)

•Ops Coordinator Review [signature] Date 9-18-91

PRETEST CALIBRATION

Cal. Equip ID: / I&C Technician: / Date:	Ideal	As-Left

POST-TEST CALIBRATION

Cal. Equip. ID: / I&C Technician: / Date:	As Found

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

Target Test Pressure
•System Temperature 65°F
•Test Pressure 1310 (PI-4019) / 1275 (PI-4018)
Maximum Pressure /
Minimum Pressure /

Tolerance + psig - psig
•At Test Pressure 2132 Time
Hold Time Complete Time
•Test Complete 2145 Time
Test Operator [illegible] Date 9 13 91

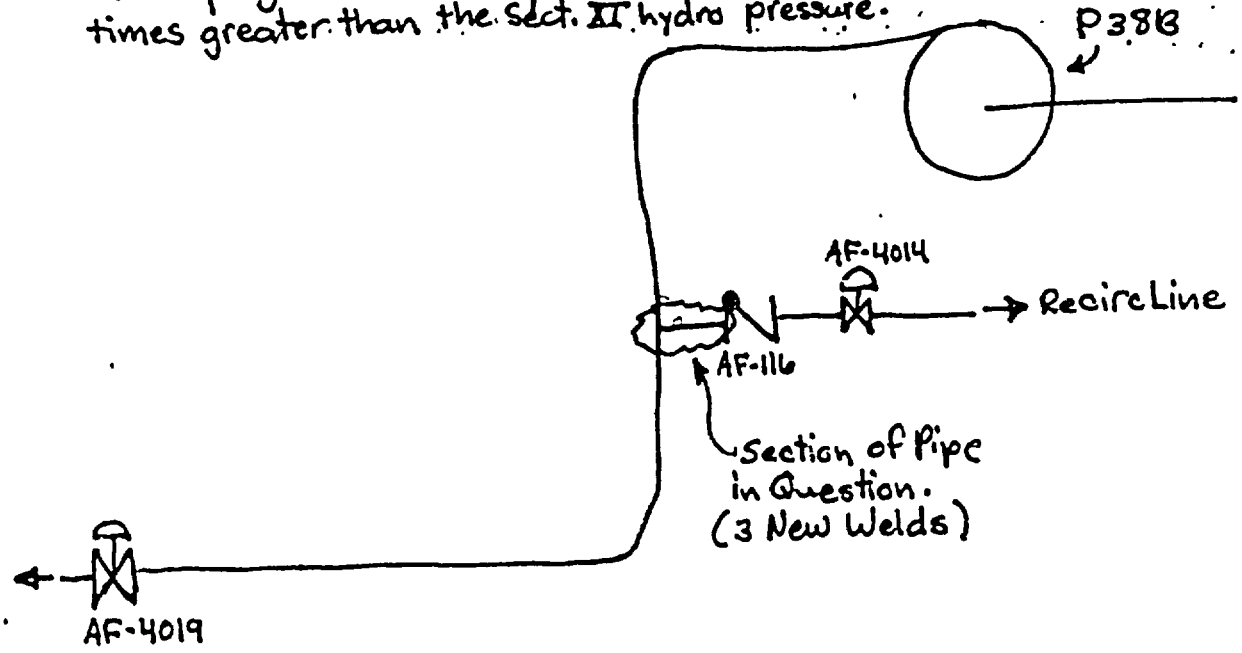
CAUTION: Independent Verification of Restoration per PBNP 3.1.1 may be needed.

Test Director G. D. Stilacky Date 9-19-91
Ops Coordinator Review [signature] Date 9-20-91
QAC Review [signature] Date 10/10/91
Comments:

• - Indicates data entry for initial service leak test.

Test Variance Description (cont.): The hydro was not practical because the nearest flange is on the suction side of the pump (which has a much lower design pressure.) and its ability to with stand normal hydro pressures was questionable.

ASME sect. XI was also checked for guidance on pressure testing of simila class components. Per Sect. XI, we would be able to hydro the new pipe using the suction side design pressure, because the new pipe is upstream of the first off discharge isolation valve. This would result in a hydro pressure ≤ 150 psig. In actuality then, the inservice test will produce pressures ~10 times greater than the sect. XI hydro pressure.



RECORD OF REPAIR OR ALTERATION

STATE OF WISCONSIN
DEPARTMENT OF INDUSTRY, LABOR & HUMAN RELATIONS
SAFETY & BUILDING DIVISION
201 EAST WASHINGTON AVE.
POST OFFICE BOX 7969
MADISON, WISCONSIN 53707

REPAIR OR ALTERATION COMPLETED ON.

☐ POWER BOILER
☐ HEATING BOILER
☐ PRESSURE VESSEL
☐ MINIATURE BOILER

WIS REG.# ____
NB # ____
SERIAL # ____
OTHER MWR 913661
88-099*8

MANUFACTURER: ____

WORK COMPLETED BY:	IN THE PLANT OF:
NAME: Phillips, Getschow Company	OWNERS NAME: Wisconsin Electric Power Company
ADDRESS: 2860 Glenmore Road	LOCATION OF REPAIR: Point Beach Nuclear Plant
Green Bay, WI 54311	6610 Nuclear Road
ZIP	Two Rivers, WI 54241

DESCRIPTION OF REPAIR:
(USE REVERSE FOR SKETCH) This SB-190 is being filed in accordance with the Wisconsin Administrative Code ILHR 41.56 "Welded Repairs, (1) Record of Repair and (2) Record of Modifications, Replacement, Additions or Alterations.

Work Scope Description: The purpose of this modification is to increase the flow capacity of the P38A Aux. Feedwater Pump Recirc. Line for ASME Section XI testing.

Materials Welded: SA-106 Gr. B to SA-182F304 and SA182F316.

Welding Rods: 3/32" ER70S-2 Ht # 065513, 1/8" ER70S-2 Ht # 065573, 3/32" E-7018 Ht # 89046, 1/8" ER309 Ht # DT5845, 1/8" ER316 Ht # DT5868

Welders: MJT-Michael Tripp, DV-David Veglahn, GLB-Geo. Bauer, PGH-Paul Hirst

HYDROSTATIC TEST psi By WEPCO NDE [signature] Lee K. Zingler Level II PT

REPAIR OR ALTERATIONS WERE MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WISCONSIN DEPT. OF INDUSTRY, LABOR & HUMAN RELATIONS, WIS. ADM. CODE, CHAPTER IND 42.

THE WELDING WAS COMPLETED BY: MJT, DV, GLB, PGH WHO HAS MET THE TEST REQUIREMENTS OF SAID RULES.

WELDING PROCEDURE SPECIFICATION: Phillips, Getschow Welding Procedures Specifications WPS-1, 8-1, and 8.

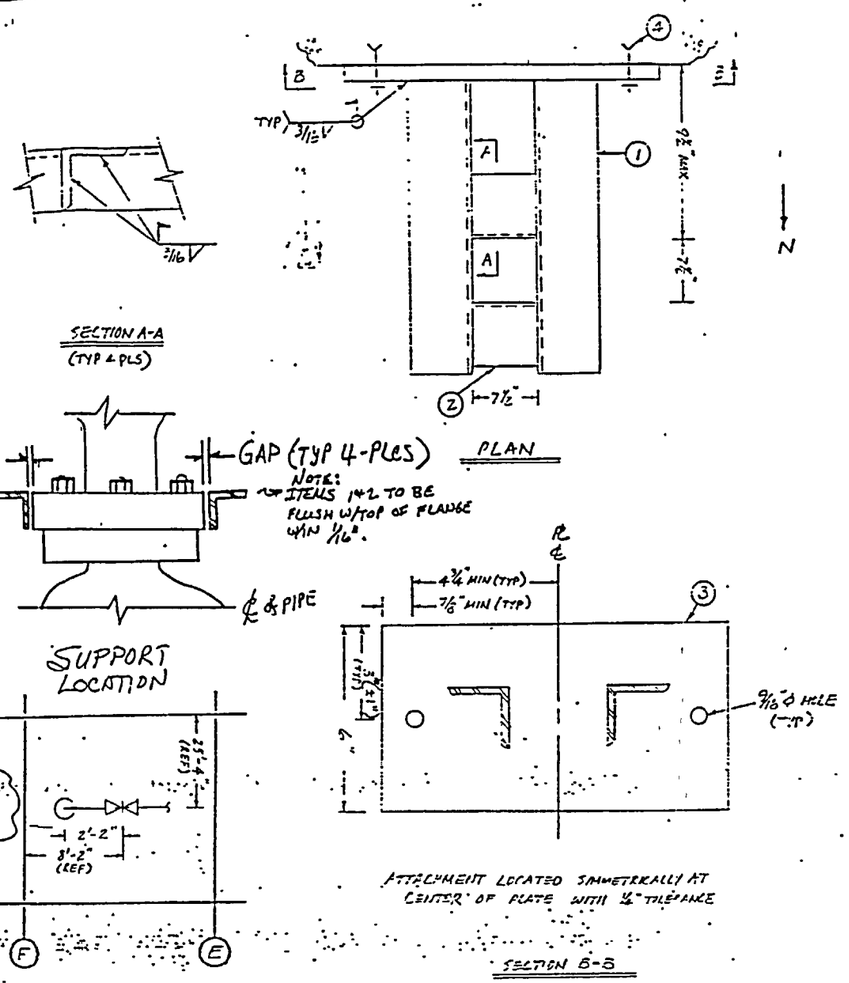
CONTRACTOR REP. SIGNATURE: [signature] Lee K. Zingler DATE: 1-6-92

I, the undersigned, have inspected the work described in the report and state that to the best of my knowledge and belief, this work has been done in accordance with the requirements of Wis. Adm Code Chapter IND 42. By signing this certificate, neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the work described in this Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection, except such liability as may be provided in a policy of insurance which the Inspector's insurance company may issue upon said object and then only in accordance with the terms of said policy.

FEB 14 1992

[signature]	78	Hartford Steam Boiler	1/09/92
AUTHORIZED INSPECTOR -	WIS. COM. NO	EMPLOYED BY	DATE

DILHR SB 190 (R. 2/80)



ITEM	QTY.	FIG. NO. PART NO. CALC. NO.	BILL OF MATERIAL DESCRIPTION	WT. (LB.)	RATINGS (LB.) A OR B	C	D
1	2		L 2x2x½ x 1'-10" LG (A36)				
2	2		L 2x2x¼ x 7½" LG (A-36)				
3	1		PL ½" x ⅝" x 1'-3½" (A-36)				
4	2		½"Ø HILTI-KWIK II BOLT Le=5" MIN				
			TOTAL WT.				

SPECIAL INSTRUCTIONS: THE GAPS BETWEEN VALVE BODY AND FRAME ARE: 1/16" ALL AROUND (HORIZONTAL); ½" (VERTICAL)

FILE NO. : 1000705
NODE POINT: 75
SUPPORT RATING

NOTES:
1. THERE IS A ½" TOLERANCE ON ALL DIMENSIONS.
2. THE GAP DIMENSIONS SHALL BE 1/16" IN EACH DIRECTION WITH A TOLERANCE OF +0 -1/16". NOTE THAT THE CUMULATIVE GAP IN ANY DIRECTION SHALL BE < ⅛".
3. THERE SHALL BE A 2 BOLT-DIAMETER TOLERANCE FOR THE LOCATION OF THE CEA BOLTS. INSTALL PER HHI 7.1 OR EQUIVALENT.
4. LARGER STOCK SIZES MAY BE SUBSITUTED FOR ALL ITEMS PER FIELD DISCRETION.

ACC. NO. 1000705
ADDENDUM A TO REV. 01
ATTACHMENT 2
PAGE 2

TECHNICAL FILE INDEX:
MODIFICATION REQUEST:
HANGER NO. DB3A-1001G

COMPUTER GRAPHICS SYSTEM DRAFTING

MDD 88-099AB

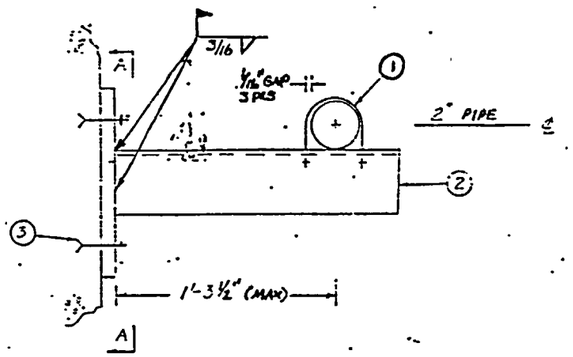
REV NO.	DATE	ZONE	REVISION DESCRIPTION	DRAWN	CHK'D	APPRV'D	REL'D

MICROFILM NO.
C.G.S. FILE NO.
SCALE: NTS
PROJ. I.D. 31628
DRAWN SJL DATE
APPRVD. DAR 8/16/91 DATE
CHECKED JP 8-16-91
APPRVD.
DRAFTG. JP
APPRVD.

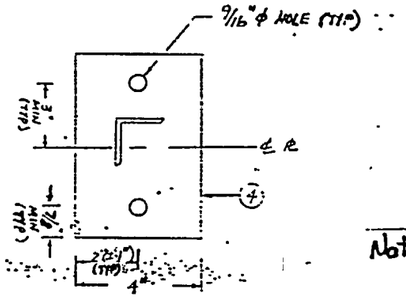
WISCONSIN ELECTRIC

POINT BEACH NUCLEAR PLT UNIT-2
WISCONSIN ELECTRIC POWER CO.
MILWAUKEE, WISCONSIN
PBA-1070 SH. 1

B | P.B.A | -1.0 | 7.0 | .S | H. | .0 | 1.



ELEVATION LOOKING WEST



SECTION A-A

ITEM	QTY.	FIG. NO. PART NO. CALC. NO.	BILL OF MATERIAL DESCRIPTION	WT. (LB.)	RATINGS (LB.) A OR B	C	D
1	1	137N	U-BOLT FOR 2"ϕ PIPE WITH DOUBLE NUTS				
2	1		L2x2x1/4 x 1'-8" LG (A-36) CUT TO SMT				
3	2		1/2"ϕ HILTI-KWIK II BOLT Le=5" MIN				
4	1		PL 1/2" x 8" x 4" (A-36)				
			TOTAL WT.				

FILE NO. = 100070S
NODE POINT: 110

SPECIAL INSTRUCTIONS

SUPPORT RATING

Notes:
1. There is a 1/2" tolerance on all dimensions.
2. The gap dimensions shall be 1/16" in each direction with a tolerance of +0 / -1/16". Note that the cumulative gap in any direction shall be < 1/8".
3. There shall be a 2 bolt-diameter tolerance for the location of the CEA bolts. Install per INT 7.1 or equivalent
4. Larger stock sizes may be substituted for all items per field discretion.

ACC. NO. 100070S
ADDENDUM A TO REV. 01
ATTACHMENT 2
PAGE 8

TECHNICAL FILE INDEX:
MODIFICATION REQUEST:
HANGER NO: DB3A-1002G

COMPUTER GRAPHICS SYSTEM
MOD 88-094 # R

REV NO.	DATE	ZONE	REVISION DESCRIPTION	DRAWN	CK'D	APPR'D	REL'D

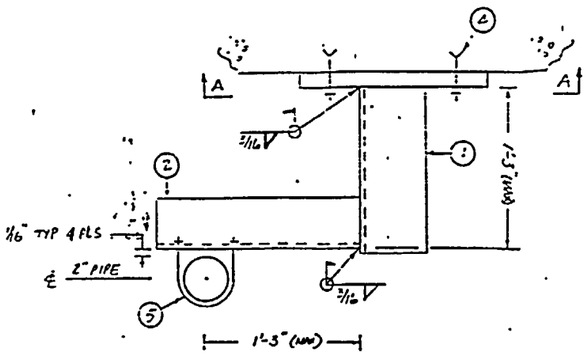
MICROFILM NO.
C.G.S. FILE NO.
SCALE - NTS
PROJ. I.D.: 31628
DRAWN SJL DATE
APPR'D. JDR 8/6/91 DATE
CHECKED JP 8-16-91
APPR'D.
DRAFTS
APPR'D.

WISCONSIN ELECTRIC

POINT BEACH NUCLEAR PLT. UNIT-2
WISCONSIN ELECTRIC POWER CO.
MILWAUKEE, WISCONSIN
PBA-1070 SH. 2

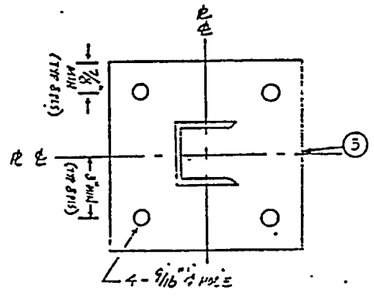
B | P.B.A-.1.0.7.0. .S.H. .0.2.

LS01195



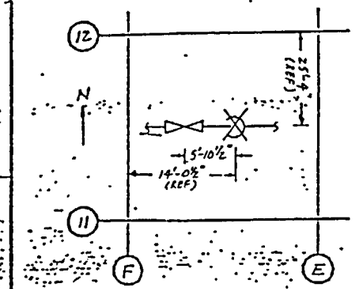
PLAN

℄ EL 2" HIGHER FROM VALVE END



ATTACHMENT LOCATED AT CENTER OF PLATE WITH ½" TOLERANCE

SECTION A-A



ITEM	QTY.	FIG. NO. PART NO. CALC. NO.	BILL OF MATERIAL DESCRIPTION	WT. (LB.)	RATINGS (LB.) A OR B	C	D
1	1		C4x5.4x1'-6" LG (A-36)				
2	1		C3x4.1x1'-6" LG (A-36)				
3	1		PL ½"x 9"x 9" (A-36)				
4	4		½" ⌀ HILTI-KWIK II BOLT Le=5" MIN				
5	1	137N	⅜" ⌀ U-BOLT WITH DOUBLE NUTS				
			TOTAL WT.				

FILE NO. : 1000705

NODE POINT: 170

SPECIAL INSTRUCTIONS

SUPPORT RATING

Notes:
1. There is a ½" tolerance on all dimensions.
2. The gap dimensions shall be 1/16" in each direction with a tolerance of $^{+0}_{-1/16}$". Note that the cumulative gap in any direction shall be < ⅛".
3. There shall be a 2 bolt-diameter tolerance for the location of the CEA bolts. Install per MI 7.1 or equivalent
4. Larger stock sizes may be substituted for all items per field discretion.

ACC. NO. 100070S
ADDENDUM A TO REV. 01
ATTACHMENT 2
PAGE 5

TECHNICAL FILE INDEX:
MODIFICATION REQUEST:
HANGER NO: DB3A-10030

COMPUTER GRAPHICS SYSTEM

mod 88-099*B

REV	DATE	ZONE	REVISION DESCRIPTION	DRAWN	CHK'D	APPRV'D	REL'D

MICROFILM NO.

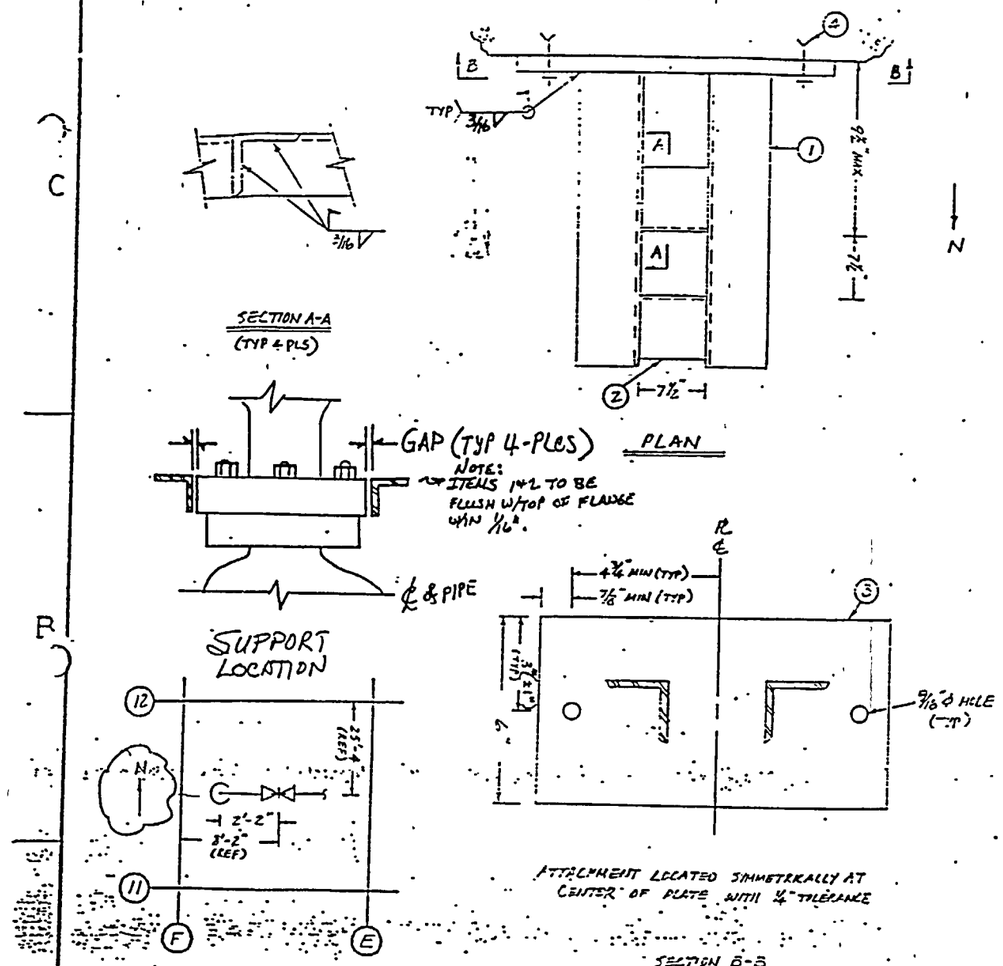
C.G.S. FILE NO.

SCALE: NTS		PROJ. I.D. 31628	
DRAWN SJL	DATE	APPRVD. QZR 8/16/91	DATE
CHECKED JP 8-16-91		APPRVD.	
DRAFTG. JP		APPRVD.	

WISCONSIN ELECTRIC

POINT BEACH NUCLEAR PLT UNIT-2
WISCONSIN ELECTRIC POWER CO.
MILWAUKEE, WISCONSIN
PBA-1070 SH. 3

B | P.B.A-.1.0.7.0. .S.H. .0.3. | LSO1196



ITEM	QTY.	FIG. NO. / PART NO. / CALC. NO.	BILL OF MATERIAL DESCRIPTION	WT. (LB.)	RATINGS (LB.) A OR B	C	D
1	2		L2×2×1/4×1'-10" LG (A36)				
2	2		L2×2×1/4×7 1/2" LG (A-36)				
3	1		PL 1/2"×6"×1'-2 3/4" (A-36)				
4	2		1/2"ø HILTI-KWIK II BOLT Le=5" MIN				
			TOTAL WT.				

SPECIAL INSTRUCTIONS: THE GAPS BETWEEN VALVE BODY AND FRME ARE: 1/16" ALL ARDUND (HORIZONTAL); 1/4" (VERTICAL)

SUPPORT RATING

FILE NO. : 100070S

NODE POINT: 1465

NOTES:
1. THERE IS A 1/2" TOLERANCE ON ALL DIMENSIONS.
2. THE GAP DIMENSIONS SHALL BE: 1/16" IN EACH DIRECTION WITH A TOLERANCE OF +0 -1/16". NOTE THAT THE CUMULATIVE GAP IN ANY DIRECTION SHALL BE < 1/8".
3. THERE SHALL BE A 2 BOLT-DIAMETER TOLERANCE FOR THE LOCATION OF THE CEA BOLTS. Install per WCAP 7.1 or equivalent.
4. LARGER STOCK SIZES MAY BE SUBSTITUTED FOR ALL ITEMS PER FIELD DISCRETION.

ACC. NO. 100070S
ADDENDUM A TO REV. 01
ATTACHMENT 2
PAGE 2

TECHNICAL FILE INDEX:
MODIFICATION REQUEST:
HANGER NO. DB3A-20016

COMPUTER GRAPHICS SYSTEM DRAFTED

MCP 98-0494-3

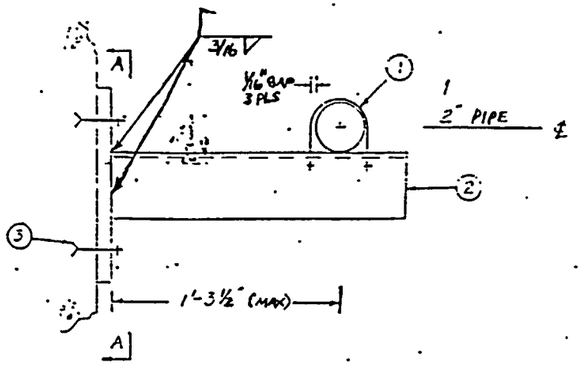
REV	DATE	ZONE	REVISION DESCRIPTION	DRAWN	CHK'D	APPRV'D	REL'D

MICROFILM NO.
C.G.S. FILE NO.
SCALE: NTS
PROJ. I.D. 31628
DRAWN SB DATE
APPRVD. QAR 8/16/91 DATE
CHECKED SP 8-16-91
APPRVD.
DRAFTED
APPRVD.

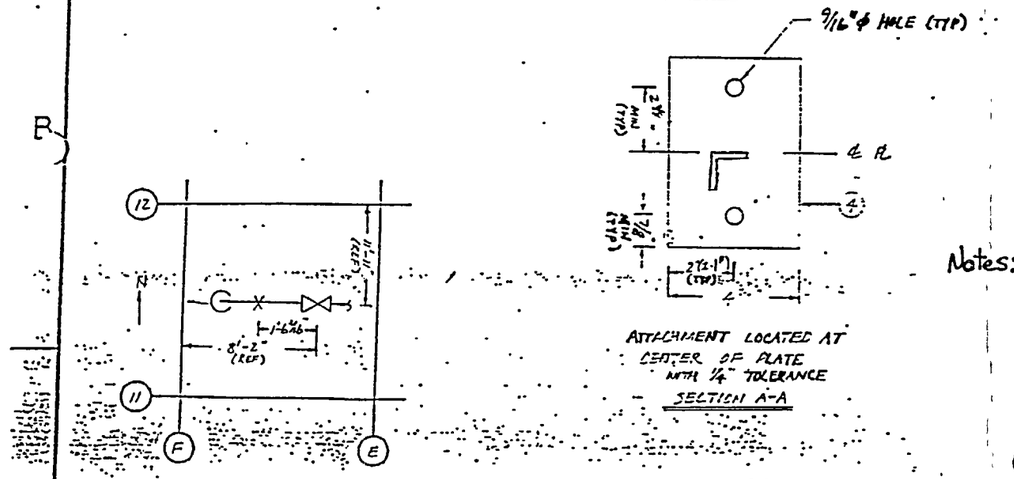
WISCONSIN ELECTRIC

POINT BEACH NUCLEAR PLT UNIT-2
WISCONSIN ELECTRIC POWER CO.
MILWAUKEE, WISCONSIN
PBA-1070 SH. 4

B | P.B.A-.1.0.7.0. .S.H. .0.4.



ELEVATION LOOKING WEST



ITEM	QTY.	FIG. NO. PART NO. CALC. NO.	BILL OF MATERIAL DESCRIPTION	WT. (LB.)	RATINGS (LB.) A OR B	C	D
1	1	137N	U-BOLT FOR 2"ϕ PIPE WITH DOUBLE NUTS				
2	1		L2×2×¼ × 1'-8" LG (A-36) CUT TO SUIT				
3	2		½"ϕ HILTI-KWIK II BOLT L_e=5" MIN				
4	1		PL ½"×8"×4" (A-36)				
			TOTAL WT.				

FILE NO. : 100070S
NODE POINT: 1500

SPECIAL INSTRUCTIONS

SUPPORT RATING

Notes:
1. There is a ½" tolerance on all dimensions.
2. The gap dimensions shall be 1/16" in each direction with a tolerance of $^{+0}_{-1/16}$". Note that the cumulative gap in any direction shall be < ⅛".
3. There shall be a 2 bolt-diameter tolerance for the location of the CEA bolts. Install per WE 7.1 or equivalent.
4. Larger stock sizes may be substituted for all items per field discretion.

ACC. NO. 100070S
ADDENDUM A TO REV. 01
ATTACHMENT 2
PAGE 9

TECHNICAL FILE INDEX:
MODIFICATION REQUEST:
HANGER NO: DB3A-2002G

COMPUTER GRAPHICS SYSTEM DRAFTER MOD 88-099 B

REV NO.	DATE	ZONE	REVISION DESCRIPTION	DRAWN	CK'D	APPR'D	REL'D
0	11/15/91		AS-BUILT, INCORPORATED ECR PB-91-063	JAS			

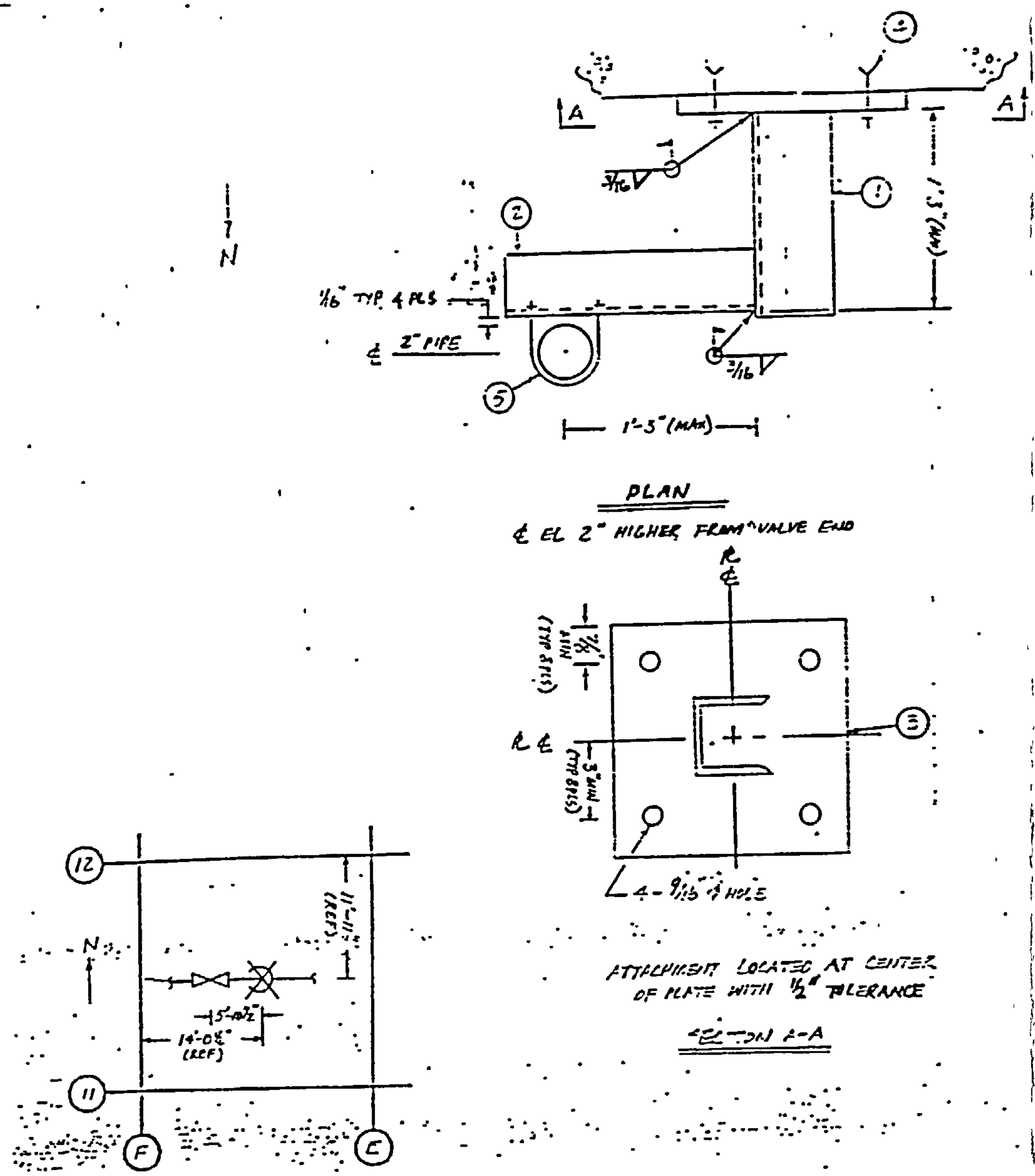
MICROFILM NO.
C.G.S. FILE NO.
SCALE - NTS
PROJ. I.D. 31628
DRAWN SJL DATE
APPRVD. QRR 8/16/91 DATE
CHECKED SP 8-16-91
APPRVD.
DRAFTED
APPRVD.

WISCONSIN ELECTRIC

POINT BEACH NUCLEAR PLT. UNIT-2
WISCONSIN ELECTRIC POWER CO.
MILWAUKEE, WISCONSIN
PBA-1070 SH. 5

B | P.B.A-.1.0.7.0. .S.H. .0.5.

scribed instructions and the undersigned person who has executed this certificate has personal knowledge of the facts covered by this certificate.
Photographed by: Cheryl Dixon
Dated: 4-22-92
Wisconsin Electric Power Co.
J.H. Goetsch, Corp. Secy.
J.K. Duchow, Microfilm Division



ITEM	QTY.	FIG. NO. PART NO. CALC. NO.	BILL OF MATERIAL DESCRIPTION	WT. (LB.)	RATINGS (LB.) A OR B	C	D
1	1		C4×5.4×1'-6" LG (A-36)				
2	1		C3×4.1×1'-6" LG (A-36)				
3	1		PL 1/2"×9"×9" (A-36)				
4	4		1/2" ⌀ HILTI-KWIK II BOLT Le=5" MIN				
5	1	137N	3/8" ⌀ U-BOLT WITH DOUBLE NUTS				
			TOTAL WT.				

FILE NO.: 100070S
NODE POINT: 1560

SPECIAL INSTRUCTIONS: CUT OR GRIND THE EXISTING ABANDONED ANCHOR BOLTS TO FACILIATE THE INSTALLATION

SUPPORT RATING

Notes:
1. There is a 1/2" tolerance on all dimensions.
2. The gap dimensions shall be 1/16" in each direction with a tolerance of +0" / -1/16". Note that the cumulative gap in any direction shall be < 1/8".
3. There shall be a 2 bolt-diameter tolerance for the location of the CEA bolts. Install per MI 7.1 or equivalent.
4. Larger stock sizes may be substituted for all items per field discretion.

ACC. NO. 100070S
ADDENDUM A TO REV. 01
ATTACHMENT 2
PAGE 6

TECHNICAL FILE INDEX:
MODIFICATION REQUEST:
HANGER NO: DB3A-2003G

Computer Graphics System

MOD 88-099#B

REV	DATE	ZONE	REVISION DESCRIPTION	DRAWN	CHK'D	APPRV'D	REL'D

MICROFILM NO.
C.G.S. FILE NO.
SCALE: NTS — PROJ. I.D. 31628
DRAWN: S&L — DATE — APPRVD: ADR 8/16/91
CHECKED: JP 8-16-91 — APPRVD.
DRAFTG. — APPRVD.

WISCONSIN ELECTRIC

POINT BEACH NUCLEAR PLT UNIT-2
WISCONSIN ELECTRIC POWER CO.
MILWAUKEE, WISCONSIN
PBA-1070 SH. 6

B | P.B.A - 1070 SH. 06

LS01199