NUCLEAR POWER BUSINESS UNIT

WO WORK PLAN

Work Control Document: 0213471 UNIT: PB_0_

Equipment ID: RO-04015

Equipment Description: P-38B AFP MINI RECIRC ORIFICE

Work Plan Originator: Mike Desroches x6919/Dick Hughes @ 6967 Date: November 5, 2002

WORK SCOPE	
WORK SCOPE and PURPOSE	**Work Scope:** Open orifice, inspect **associated** piping with boroscope, as per workplan. **Purpose:** Informational inspection.
INITIAL CONDITIONS	P-038B O.O.S.
DANGER TAG SCOPE	RO-04015 isolation valve danger tagged closed. P-038B suction and discharge valves isolated, vented and drained. Recommended tagged closed valves, AF-40, AF-52, AF-04019, AF-04016. AF-00048 and AF-00046 would drain suction and discharge lines. Motor breaker tagged out. AF-00046A & B will be removed from the system, (cut weld) for boroscope inspection. Additionally, AF-00170A & AF-000170C swage caps removed to drain recirc line for boroscope inspection.
DANGER TAG REFERENCES	BECH 6118 M- 217 SH 1
LIMITATIONS AND PRECAUTIONS	Scaffolding may be needed to cut AF-00046A & B valve for boroscope inspection, and to make one field weld.
TOOLS AND MATERIALS	1-1/4" socket/combo wrenches, Torque wrench to 130 Ft-Lbs. Open end wrenches for ½" NPT to ½" Swage fitting.

QUALITY CONTROL		
QC REVIEW OF WORK PLAN **(independent QC review required on QA classified work order only) NA if non-QA work order** **Any change in scope requires WO WP review by QC inspector.**	_____ QC INSP.	_____ Date

SUPPORT		
SUPPORT	☐	Chemistry
	☒	**Engineering Technical Review Required on SR system.** Eng./Init./Date _____
	☒	NDE
	☒	Operations (danger tag)
	☒	QC
	☐	Security
	☐	Crane ☐TB ☐ PAB ☐ Polar ☐ Other
	☐	Other

A1314

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PRE-JOB BRIEF

Supervisor / Job Leader to conduct pre-job brief using PBF-9217 (Mtn and I&C) or OM 3.29 (OPs)

NOTE: Pre-job brief may require attendance of other workgroups involved in the work activity.

PRE-JOB BRIEF COMPLETED	_____ **Supervisor or Job Leader** _____ **Date**

NOTES

NOTE:	The steps in this work plan may be performed in any logical order.
FME:	Tools and equipment shall be checked for loose parts and debris and temporary covers should be installed for foreign material exclusion (**FME**) of system/components per Exclusion of Foreign Material from Plant components and Systems, NP 8.4.10.
NOTE:	IF inspections or discrepancies require modifications to Work Scope: THEN **STOP** work, place equipment in **SAFE** condition, and **NOTIFY** Supervision.
NOTE:	The Control Room / the Work Control Center / and the watchstander (as appropriate) shall be informed of the status of jobs which: bring in alarms, affect indications, and other work being performed on operating equipment.
NOTE:	All workers shall perform all Danger Tagging requirements as defined in NP 1.9.15
NOTE:	When replacing parts, compare the old part to the new part to verify it is an acceptable replacement.
NOTE:	If work scope changes, an R/R/M form may be required for parts replacement or repair.
NOTE:	Any pen and ink change to work plan requires initial and date by the change.
NOTE:	Write WO number on top/header of any supplemental pages added to work package, i.e., forms, procedures, checklists...

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Hold Point	Step No	Work Plan Description	Worker	Date
	1.	Prior to cutting at the joint upstream of af-0046A, erect a scaffolding IAW "MI-32.9". Ensure to complete the stationary scaffold final inspection checklist, form PBF-9114, and attach PBF-9146 to the scaffolding. Ensure the working platform allows for total access to the valve. Per CHAMPS, this is not a safe shutdown area.	MT	DATE
	2.	Establish FME requirements IAW NP 8 4.10 and PBF 9158	MT	DATE
	3.	***The following is to allow a boroscope inspection:*** Disconnect swagelok fitting upstream of AF-00049 valve. Remove ½" NPT to ½" Swage fitting, **leaving the reducing insert intact** in the pump suction piping.	MT	DATE
	4.	***The following is to allow a boroscope inspection:*** Disconnect swagelok fitting upstream of AF-00047 valve. Remove ½" NPT to ½" Swage fitting, **leaving the reducing insert intact** in the pump suction piping. *A Boroscope inspection to be done at this point.*	MT	DATE
Exercise caution when cutting on the weldolet, not to decrease socket minimum depth requirement of ½".				
	5.	Cut the weld as indicated by FW-1 on the attached weld map, at the base of AF-00046A. *(This is to allow boroscope inspection).* Clean and prep weldolet and removed piping for welding, once boroscope inspection has been completed.	MT	DATE
	6.	N/A if already completed. Record the As-Found Positon of AF-00170A valve. ☐ Open ☐ Closed ☐ Other Explain Other _____ **Prepare to divert water to drain, and open AF-00170A.** *This will drain RO-04015 orifice and also the piping downstream to allow boroscope inspection where AF-00046A and AF-00046B were removed.* If not done so already, remove swagelok cap downstream of AF-00170A vent/drain valves..	OPS	DATE

WO WORK PLAN

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Hold Point	Step No	Work Plan Description	Worker	Date
	7.	N/A if already completed. Record the As-Found Position of AF-00170C valve. ☐ Open ☐ Closed ☐ Other Explain Other _____ **Prepare to divert water to drain, and open AF-00170C.** *This will drain RO-04015 orifice and also the piping downstream to allow boroscope inspection where AF-00046A and AF-00046B were removed.* If not done so already, remove swagelok cap downstream of AF-00170C vent/drain valves.	OPS	DATE
	8.	At RO-04015: • Remove the bonnet cap bolting and the bonnet cap off the valve body.	MT	DATE
CAUTION : During the performance of the next step, TAKE ALL PRECAUTIONS POSSIBLE TO ENSURE THE CAPTURE OF ALL FOREIGN MATERIAL WHEN REMOVING THE INTERNALS FROM THE BODY OF RO-04015. hold an open bag under the internals during the removal and have a clean drop cloth on the floor to capture anything which could drop by the bag. All material needs to be saved for engineering evaluation. Engineering SHALL be present when the bonnet is removed to take photos and to document initial findings as needed. (this is why the next step has an engineering hold point.)				
ENG HOLD POINT	9.	***Do not proceed until engineering is present.*** Check the following box to indicate you have read the Caution note above: ☐ • Remove the orifice cartridge. • Remove the seat ring • Remove the seat ring gasket Engineering document initial findings:_____	MT ENG	DATE DATE

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Hold Point	Step No	Work Plan Description	Worker	Date
	10	Inspect internals and record as found condition: Take photos and quantify amount of debris found, if any. If debris is found, record number of holes partially or entirely plugged, as applicable or any debris found at the base of the cartridge. As Found condition:_____	ENG	DATE
	11	Establish an extremely clean work area. A work area, which is free of any debris, from other jobs or foreign material, which could get mixed up with anything found in during the disassembly of the orifice cartridge. This includes the floor area in the immediate vicinity wher the disassembly will take place.	MT SUPVSR	DATE DATE
	12	After a clean work area has been established, perform the following: • Exercise special care to keep any drilling or grinding debris created during the following from becoming mixed with system debris which may exist. We are trying to keep from contaminating the findings. • Carefully grind or drill out the small bead welds which hold the retaining pins in place near the top of the cartridge. The should now be ready for disassembly (CONTACT ENGINEERING TO BE PRESENT BEFORE DISASSEMBLING THE CARTRIDGE) • With engineering present maintenance carefully disassemble the cartridge and engineering take photos and record initial findings of the cartridge disassembly, quantifying any debris found and record the number of holes entirely or partially plugged. As found condition:_____	MT ENG	DATE DATE
	13	Notify NDE group that a boroscope inspection of the piping internals, can now be done.	MT	DATE

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Hold Point	Step No	Work Plan Description	Worker	Date
	14	NDE group to perform an engineering directed boroscope inspection of recirc line piping. Engineering to review boroscope inspection results and record findings below. Comments: _____ _____ _____ _____ _____	ENG	DATE
AS-Found Condition	15	Engineering review as found condition and evaluate findings of flow orifice and boroscope inspections. Evaluation: As Found Condition ☐ SAT As Found Condition ☐ UNSAT , if UNSAT provide recommended actions. **Recommended Actions:** _____ _____ _____ _____ _____	ENG	DATE
QC HOLD POINT	16	If Engineering evaluation of the as found condition shows it to be UNSAT, THEN review the recommended actions, and determine if any **additional** QC inspection required. Additional QC inspection required: ☐ NO ☐ YES If yes, return the work plan to planning to have additional hold or inspection points added.	QC	DATE
	17	*N/A this step if no actions are required.* Perform recommended corrective actions (shown in **AS-Found Condition** Step signed by engineering). Record actions performed:_____ _____ _____	MT	DATE

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Hold Point	Step No	Work Plan Description	Worker	Date
QC HOLD POINT	18	***Reference Attached weld map for location of FW-1.*** Perform an FME inspection of the piping internals prior to fit up and closure @ FW-1 (joint just upstream of AF –046A).	MT QC	DATE DATE
	19	Ensure boroscope inspections are complete. A qualified welder to WPM 2.P1-GT to perform weld referenced as FW-1, as per the weld map and weld data sheet, included with this work order.	MT	DATE
	20	Fabricate new retaining pins from the following material: Type 316 weld wire that is 0.125" diameter, has been accepted for use by engineering. As an option and If deemed necessary by engineering, reference Att: A for details on fabricating new alignment pins. (Diameter of Att. A is slightly less than what OE has shown, that 0.125" diameter 316 wire worked well and is tack welded).	MT	DATE
	21	***Cartridge Assembly*** • realign vent holes at the top of the retainer and replace pins. Pins are to be placed 180 degrees from each other and tack welded as per weld data sheet.	MT	DATE
QC HOLD POINT	22	Perform FME inspection prior to reassembly /system closure. • At RO-04015 orifice	MT QC	DATE DATE
	23	To re-install the flow trim use new gaskets, SI# 100-3317 and 100-3318, and the following. • Install seat ring gasket • Install seat ring • Install the cartridge; making sure the end with the pins is at the top or toward the bonnet. • Install bonnet gasket • Install bonnet and tighten bonnet flange bolting to finger tightness.	MT	DATE

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Hold Point	Step No	Work Plan Description	Worker	Date
QC HOLD POINT	24	***QC HOLD POINT: Witness Torque to be within +/- 5 ft-lbs of specified value.*** Torque fasteners using a standard three pass process increasing torque values in one third increments, (i.e. 40 Ft. Lbs., 80 Ft. Lbs., then final), and using a staggered pattern. **Ensure bonnet cover gap to valve body is tightened down evenly.** Final Torque of Bonnet Fasteners is **130 Ft-Lbs. (+/-) 5 Ft-lbs.** M&TE: _____ Cal Due Date: _____ Record Final As Left Torque: _____ Ft-Lbs.	MT QC	DATE DATE
QC HOLD POINT	25	Perform FME inspection prior to reassembly /system closure. • At AF-00049	MT QC	DATE DATE
	26	Install ½" NPT to ½" Swage fitting into the reducing insert, pump side of AF-00049 valve. Reconnect swagelok fitting to return line to service condition, referencing MI 32.11 if needed.	MT	DATE
QC HOLD POINT	27	Perform FME inspection prior to reassembly /system closure. • At AF-00047	MT QC	DATE DATE
	28	Install ½" NPT to ½" Swage fitting into the reducing insert, pump side of AF-00047 valve. Reconnect swagelok fitting to return line to service condition, referencing MI 32.11 if needed.	MT	DATE
	29	Notify Operations that inspections are complete.	MT	DATE

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Hold Point	Step No	Work Plan Description	Worker	Date
	30	If not done so already, return swagelok cap downstream of AF-00170A vent/drain valve and return this valve to the As-Found Position, recorded earlier. As Left valve position was: ☐ Open ☐ Close ☐ Other Reference As-Found valve position recorded earlier.	OPS Verifier	DATE
	31	If not done so already, return swagelok cap downstream of AF-00170C vent/drain valve and return this valve to the As-Found Position, recorded earlier. As Left valve position was: ☐ Open ☐ Close ☐ Other Reference As-Found valve position recorded earlier.	OPS Verifier	DATE
Fill and Vent	32	P-038B pump, suction and discharge lines, and instrumentation lines, can be filled and vented as per OI-62A.	OPS	DATE
PMT	33	Perform Leak Check @ NOP/NOT on the RO-04015 B/B flange joint ☐ SAT ☐ UNSAT Comments: _____	OPS	DATE
	34	Perform a Leak Check at all fittings loosened or removed. AF-00047 valve ☐ SAT ☐ UNSAT AF-00049 valve ☐ SAT ☐ UNSAT AF-00170A downstream cap ☐ SAT ☐ UNSAT AF-00170C downstream cap ☐ SAT ☐ UNSAT	OPS	DATE
PMT	35	Inspect weld identified as FW-1 on the attached weld map, downstream of AF-00046A, at normal operating pressure and temperature, and perform a leak check. Leak Check ☐ Sat ☐ Unsat Comments: _____ *Note: This inspection is exempt from ASME Sect. XI pressure test requirements, for this ¾" Class 3 valve.*	OPS	DATE

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Hold Point	Step No	Work Plan Description	Worker	Date
HOUSE KEEPING	36	Remove all debris, tools, and materials from the area. Ensure all work areas meet PBNP housekeeping expectations. Notify scaffolding crew to remove scaffolding if not done already.	MT	DATE
LABELING	37	Ensure labeling is adequate Transfer or order new labels if required.	MT	DATE

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OPERATIONS

RETURN TO SERVICE TESTING	1.	As Required IAW PBF 2114 OI-62A ☐ Sat ☐ Unsat Comments:_____	**OPS**	**DATE**

POST-JOB BRIEF

Conduct post-job debrief using PBF-9218 (Mtn and I&C) or OM 3.29 (OPs). Document lessons learned, good practices, problems encountered, etc. on feedback form. Debrief should include all applicable work groups.

POST-JOB DEBRIEF COMPLETED	**Supervisor or Job Leader** **Date**

FEEDBACK

Fill out feedback form attached to work package (maintenance group use PBF-9929)	**MT**	**DATE**

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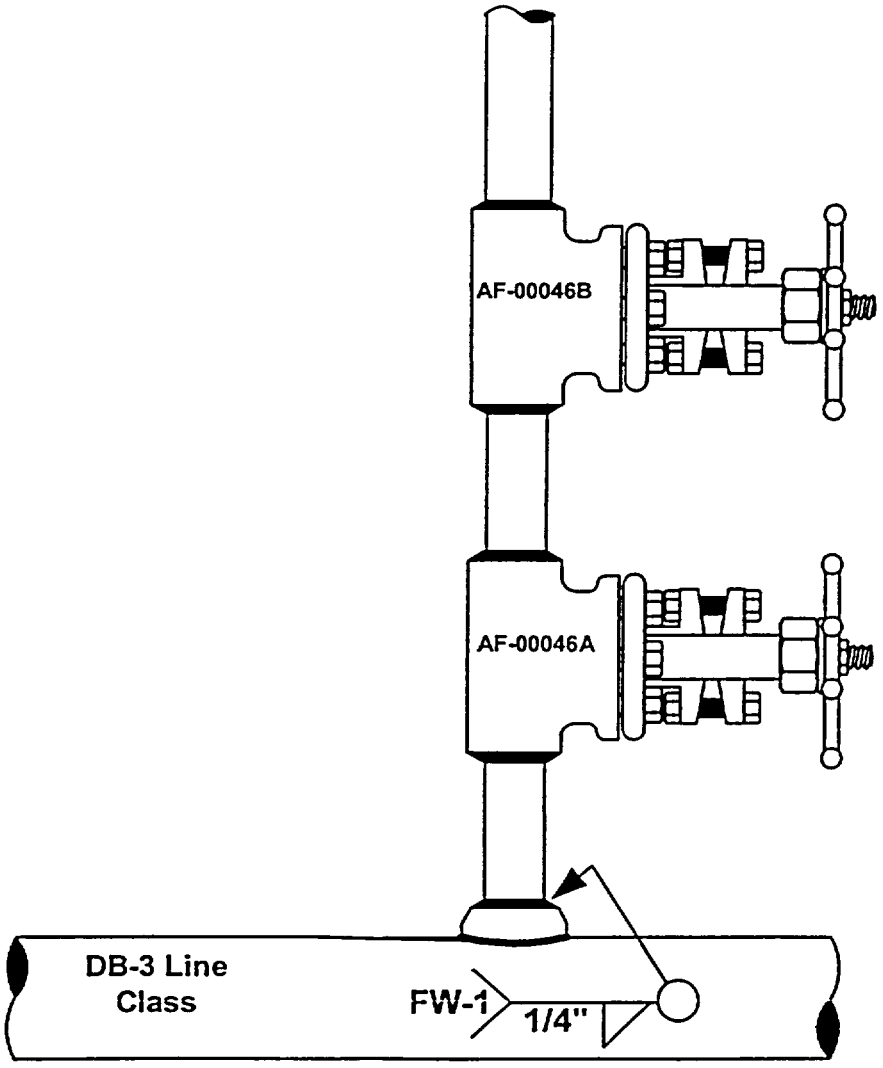

Weld Map

Point Beach Nuclear Plant

FILLET/SOCKET WELD DATA SHEET

WORK AUTHORIZATION # (WO, MR, etc.) 0213471

DRAWING # _____ REVISION _____ DATE 11/04/02 INITIATOR/DATE M.Desroches11/1/02

BASE MATL TYPE/GR Pins (316 WELD WIRE) Nom Thick 1/8" to BASE MATL TYPE/GR Cartridge 316 RO-04015 Nom Thick NA

EQUIPMENT # At joint upstream of AF-00046A LINE # N/A FINAL ACCEPTANCE/DATE

WELDING PROCEDURE SPEC. WPM 2.P8-GT	Weld# N/A Group	Size Tack Initials	Weld# Group	Size Initials	Weld# Group	Size Initials	Weld# Group	Size Initials	Weld# Group	Size Initials
Fit-up, Alignment, Cleanliness,	☒ MM		☐		☐		☐		☐	
	☐		☐		☐		☐		☐	
	☐		☐		☐		☐		☐	
Electrode Size _____	☒ MM		☐		☐		☐		☐	
Type ER316	☐		☐		☐		☐		☐	
Trace # _____	☐		☐		☐		☐		☐	
Shield Flow Rate _____ CFH	☐		☐		☐		☐		☐	
Type _____	☐		☐		☐		☐		☐	
Trace # _____	☐		☐		☐		☐		☐	
PREHEAT TEMPERATURE	☒ MM		☐		☐		☐		☐	
Min Temp. 50 / _____ F	☐		☐		☐		☐		☐	
Purge: < _____ % 0	☐		☐		☐		☐		☐	
Oxygen Analyzer S/N _____	☐		☐		☐		☐		☐	
INTERPASS TEMPERATURE	☒ MM		☐		☐		☐		☐	
Maximum Temperature 350 F	☐		☐		☐		☐		☐	
Welders Symbol/ID	☐		☐		☐		☐		☐	
	☐		☐		☐		☐		☐	
Final NDE: ☐ Procedure	Initials	Form#	Initials	Form#	Initials	Form#	Initials	Form#	Initials	Form#
Final VT ☒ _____										
2) _____										
3) _____										

Comments: No Visible cracking inspection to be completed by welder

Point Beach Nuclear Plant

FILLET/SOCKET WELD DATA SHEET

WORK AUTHORIZATION # (WO, MR, etc.) 0213471

DRAWING # WO Weld Map REVISION N/A DATE 11/04/02 INITIATOR/DATE M.Desroches11/4/02

BASE MATL TYPE/GR A105 3000# Fitting Nom Thick N/A to BASE MATL TYPE/GR A106 Sch. 80 Pipe Nom Thick 0.154"

EQUIPMENT # RO-04015 LINE # N/A FINAL ACCEPTANCE/DATE

WELDING PROCEDURE SPEC. WPM 2.P1-GT	Weld# FW-1 Group	Size ¼" Initials	Weld# Group	Size Initials	Weld# Group	Size Initials	Weld# Group	Size Initials	Weld# Group	Size Initials
Fit-up, Alignment, Cleanliness,	☒ MM		☐		☐		☐		☐	
	☐		☐		☐		☐		☐	
	☐		☐		☐		☐		☐	
Electrode Size	☒ MM		☐		☐		☐		☐	
Type ER70S-2	☐		☐		☐		☐		☐	
Trace #	☐		☐		☐		☐		☐	
Shield Flow Rate 5-25 CFH	☐		☐		☐		☐		☐	
Type	☐		☐		☐		☐		☐	
Trace #	☐		☐		☐		☐		☐	
PREHEAT TEMPERATURE	☒ MM		☐		☐		☐		☐	
Min Temp. 50 / F	☐		☐		☐		☐		☐	
Purge: < % 0	☐		☐		☐		☐		☐	
Oxygen Analyzer S/N	☐		☐		☐		☐		☐	
INTERPASS TEMPERATURE	☒ MM		☐		☐		☐		☐	
Maximum Temperature 650 F	☐		☐		☐		☐		☐	
Welders Symbol/ID	☐		☐		☐		☐		☐	
	☐		☐		☐		☐		☐	
Final NDE: ☒ Procedure	Initials	Form#	Initials	Form#	Initials	Form#	Initials	Form#	Initials	Form#
Final VT ☒										
2)										
3)										

Comments: Final VT as per B31.1 1967 Ed.

Weld size can be ¼" or edge of fitting, whichever is least.