

2.18

FINAL DESIGN

SCOPE: See attached pages.

FINAL DESIGN DESCRIPTION:

See attached Pages

Other design packages: 88-099*B B3A & B Aux FW Pumps
88-099*C 2P29 Aux FW Pump

Final design by Julien Pederson

Date 3-27-91

Design verification by [Signature]

Date 4/18/91

(reference QP 3-2)

(2.18.9) QP 6-2 requirements apply YES NO

(2.18.10) PBNP Limited scope mod YES NO

2.19

FINAL DESIGN REVIEW

	SIGNATURE	DATE	COMMENTS
<input checked="" type="checkbox"/> MTN	<u>[Signature]</u>	<u>4/12/91</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Attached
<input checked="" type="checkbox"/> OPS	<u>[Signature]</u>	<u>9/10/91</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Attached
<input checked="" type="checkbox"/> I&C	<u>[Signature]</u>	<u>4-12-91</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Attached
<input checked="" type="checkbox"/> KSE	<u>Jola Pall</u>	<u>4-9-91</u>	<input checked="" type="checkbox"/> None <input type="checkbox"/> Attached
<input type="checkbox"/> EIE			<input type="checkbox"/> None <input type="checkbox"/> Attached
<input type="checkbox"/> NSEAS			<input type="checkbox"/> None <input type="checkbox"/> Attached
<input type="checkbox"/> Other			<input type="checkbox"/> None <input type="checkbox"/> Attached
<input type="checkbox"/> Other			<input type="checkbox"/> None <input type="checkbox"/> Attached

2.20

QA

Non-QA;

Champs code: _____

BASIS:

Quality Engineer [Signature]

A154

4/11/91

MICROFILM

MAR 3 1992

FINAL DESIGN APPROVAL [Signature]

Date 4/12/91

2.21

MODIFICATION ENGINEER: Review/Update

Manager's Supervisory Staff Review Yes No

50.59 Review Required Yes No

Approved X Disapproved _____

SER No. 91-025 MSSM No. 91-06

NRC Approval Required Yes No

2.22

RESPONSIBLE ENGINEER

Attach approved IWP:

Signature: Julie Pederson Date 4-12-91

2.22.10

MODIFICATION ENGINEER

Approve mod package and IWP:

Signature: W.S. Horn Date 4/2/91

2.23

GENERAL SUPERINTENDENT - MAINTENANCE

Installation Release

Final design, 10CFR50.59, and IWP are approved and adequate.

Signature: [Signature] Date 4-12-91

2.27

MODIFICATION CLOSEOUT:

MR complete including completion of the installation work plan and the closeout checklist.

Responsible Engineer: [Signature] Date 2/3/92

Modification Engineer: W.S. Horn Date 2/7/92

2.28

QUALITY ASSURANCE REVIEW:

N/A Acceptance by Kelly Halperin Date 2/11/92

2.34

SUPERVISOR - STAFF SERVICES

Completion:

Documentation updates submitted and records complete

Signature: H. A. Dent Date 2/14/92

NUCLEAR POWER DEPARTMENT
10 CFR 50.59 REPORT

Reference Document(s) # MR 88-099

Title of Proposed Modification,
Procedure Change, Test or Experiment Increased Aux Feed Pump Mini-Recirc Line Flow Capacity

Prepared by Julie Peterson Date 3-27-91
 Reviewed by JM W.B. Franer Date 5-27-91
 For the MSS J. B. Schuyler MSS # 91-06
 Manager - PBNP Approval [Signature] Date 3/28/91

In lieu of MSS and Manager signature, attached EQR-26d if serial review has been conducted. (MSS and manager approval are not necessary for a determination of non-applicability.)

Section 1
Screening - Determination if Safety Evaluation is Required

A. Describe the modification, procedure change, test, or experiment and its expected effects. Include interim configurations or conditions.

This modification will add flow measurement instrumentation to the recirc line and increase the capacity of the recirc line for the Auxiliary Feedwater Pump 1P29. MR 88-099 was initiated in response to NRC Bulletin 88-04 with refinements added by NRC Generic Letter 89-04.

- B.
1. Will any system, structure or component (SSC) described in the PBNP FSAR, including its figures be altered? (Ref. 2.1.2 for exception. This question may be answered "no" although the SSC is described in the FSAR.) x Yes
 2. Could, within reasonable possibility, the proposed change affect the intended design, operation, function or method of function, of an SSC important to safety which is described in the PBNP FSAR? Yes x
 3. Will any procedure described in the PBNP FSAR be altered? Yes x
 4. Will a test or experiment be performed which is not described in the PBNP FSAR and affects the design, operation, function or method of function, of an SSC important to safety which is described in the PBNP FSAR? Yes x
 5. Will implementation of a prior documented technical commitment to the NRC pertaining to the design, operation, function or method of function, of an SSC important to safety which is described in the PBNP FSAR be altered? Yes x
 6. Is an evaluation required (are any of the above questions answered yes)? x Yes

NOTE: If no, then provide basis for decision in Part C.
If yes, complete Sections 2-4.

Section 2
Determination If an Unreviewed Safety Question is Involved

A. List the licensing basis documents and sections where the system, structure, component, procedure, test, or experiment is described.

FSAR 10.1,10.2,10.3,10.4,14.1,10,14.1.11,14.2.4.2
Tech Specs 15.3.4,15.4.8

B. 1. Does the proposed activity increase the probability of occurrence of an accident previously evaluated in the PBNP FSAR? Yes No

The accidents "Loss of Normal Feedwater", "Loss of All AC Power to the Auxiliaries", and "Steam Generator Tube Rupture" involve the Aux Feedwater System. The new recirc line and the new flow measurement instrumentation does not effect the actuation of the Aux Feedwater System or its operation.

No association with Reference Accident Initiation.

2. Does the proposed activity increase the consequences of an accident previously evaluated in the PBNP FSAR? Yes No

The increased flow capacity of the new recirc line does not decrease Aux Feedwater flow below 100 gpm per steam generator per Calc. N-91-032. The value of 100 gpm per steam generator is the value used in the above accidents for assumed flow thus, system function is not changed.

3. Does the proposed activity increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the PBNP FSAR? Yes No

The new recirc line has the same basic configuration as the existing recirc line. The effect that the increased flow capacity of the recirc line has on the Aux Feedwater Pump was evaluated Calc. N-91-031.

4. Does the proposed activity increase the consequences of a malfunction of equipment important to safety previously evaluated in the PBNP FSAR? Yes No

The effect that the increased flow capacity of the recirc line has on the Aux Feedwater Pump was evaluated Calc. N-91-031. No malfunction of the Aux Feedwater Pump will be caused by this change.

Section 2 - Continuation

5. Does the proposed activity create the possibility of an accident of a different type than any previously evaluated in the PBNP FSAR? Yes No

The new recirc line has the same basic design configuration as the existing recirc line.

6. Does the proposed activity create the possibility of a malfunction of equipment important to safety of a different type than any previously evaluated in the PBNP FSAR? Yes No

Calculation N-91-032 estimated the effect the increased size of the new recirc line would have on the flow rates to the steam generators if AF-4002 sticks open. Flow to the steam generators may be reduced to 162 gpm per steam generator if this failure occurs with a steam generator pressure of 1100 psig. Calculation N-91-007 was used to verify that there is more than 5 minutes for this manual action. AF-4002 has position indication in the control room so this failure can be identified. AF-4002 was recently added to the ASME Section XI test program and is verified to open and close on IT-290.

7. Does the proposed activity reduce the margin of safety defined in the Basis for any Technical Specification? Yes No

This change does not effect testing of the Aux Feedwater Pumps. Installation will not remove any pumps from service that are required for Unit operation since work will be done only on the 1P29 pump during the Unit 1 refueling outage. Operability of the three remaining pumps is discussed in the Summary

DOES THE CHANGE, TEST OR EXPERIMENT INVOLVE AN UNREVIEWED SAFETY QUESTION? (IS THE ANSWER TO ANY OF THE ABOVE QUESTIONS YES?) Yes No

Section 3

Determination if a Technical Specification Change is Involved

Does the change, test or experiment involve a change in the Technical Specification? Yes No

If a change is required, briefly describe what the change should be and why it is required.

Section 4 Evaluation Summary

This modification will add flow measurement instrumentation to the recirc line and increase the capacity of the recirc line for the Auxiliary Feedwater Pump 1P29. MR 88-099 was initiated in response to NRC Bulletin 88-04 with refinements added by NRC Generic Letter 89-04.

The capacity of the recirc line is being increased from the present 30 gpm to approximately 116 gpm. The original line capacity was established solely on the basis of pumped fluid temperature rise. In order to protect the pumps from the effects of hydraulic instability at low flow rates, the capacity of the recirc line will be increased per the recommendations of the manufacturer, Byron Jackson Products, to a minimum of 100 gpm. To meet the requirements of ASME Section XI testing, flow indication will be added on the recirc lines.

Calculation N-91-032 estimated the effect the increased size of the new recirc line would have on the flow rates to the steam generators if AF-4002 sticks open. Flow to the steam generators may be reduced to 162 gpm per steam generator if this failure occurs with a steam generator pressure of 1100 psig. The 100 gpm per steam generator required in the FSAR accident analyses is still available. In addition, the manual valve AF-15 can be used to isolate the recirc line to the control valve. Calculation N-91-007 was used to verify that there is more than 5 minutes for manual action to isolate the recirc line. AF-4002 has position indication in the control room so this failure can be identified. AF-4002 was recently added to the ASME Section XI test program and is verified to open and close on 17

The modification for 1P29 will be completed during the 1991 Unit 1 refueling outage. The isolation for this work will result in the recirc lines for pumps P38A, P38B, and 2P29 being out of service in addition to the 1P29 recirc line. Pumps P38A, P38B, and 2P29 will not be out of service since discharge paths to the steam generators will be lined up to compensate for the isolation of the recirc lines. Administrative controls will be established to minimize the potential damage to the P38A, P38B, and 2P29 pumps during the time that the tie-in to the common recirc discharge line is installed for 1P29. These administrative controls are presented in detail in the installation work procedure. Installation will be completed so as to minimize the time that the recirc lines for the P38A, P38B, and 2P29 pumps are out of service.

Final Design Description MR 88-099*A

This modification will add flow measurement instrumentation to the recirc lines and increase the capacity of the recirc lines for the Auxiliary Feedwater Pump 1P29. MR 88-099 was initiated in response to NRC Bulletin 88-04 with refinements added by NRC Generic Letter 89-04.

The capacity of the recirc line is being increased from the present 30 gpm to approximately 116 gpm. The original recirc line capacity was established solely on the basis of pumped fluid temperature rise. In order to protect the pumps from the effects of hydraulic instability at low flow rates, the capacity of the recirc line will be increased per the recommendations of the manufacturer, Byron Jackson Products, to a minimum 100 gpm. To meet the requirements of ASME Section XI testing, flow indication will be added on the recirc line.

The size of the recirc piping from the branch off point on the discharge of the Aux Feedwater Pump to the common header to the Condensate Storage Tank was increased to 2 inches from 1 1/2 inches. The piping is schedule 80 up to the manual globe valve, schedule 40 from the manual globe valve to the header, and the header to the Condensate Storage Tank is schedule 10. All recirc line piping will be Type 304 stainless steel. Appropriate sizing of the AFW recirc line was verified by Calculation N-91-031.

The piping up to the control valve, AF-4002 is in the QA boundary and is therefore considered QA. The manual valve, AF-15, is at the pressure class change point between the Aux Feedwater system (1500#) and the Condensate Storage Tank (150# WPS).

The 2 inch check valve, 1AF-144, and control valve, AF-4002, are safety related valves. The check valve is a Rockwell 1500# lift check valve, figure number 3674F316J, made of Type 316 stainless steel. The control valve is a 2 inch 1500#, Copes Vulcan globe valve with a D-100-150 operator. The control valve was purchased from Marble Hill and will be refurbished by plant maintenance prior to installation. This refurbishment will include replacing the diaphragm and packing, touching up the painted surfaces on the valve operator, and a general cleaning and visual inspection. The refurbishment is necessary since the valve has been in long term storage.

Beyond the QA boundary a stainless steel plate orifice and flange will be installed for flow measurement. Local indication will be provided by a Rosemount differential pressure transmitter, model no. 1151DP5S22B1M4, with an integral LCD meter. The transmitter will be wall mounted and power will be supplied

from a nearby receptacle circuit, which is powered from Panel 7L25. The additional load on this circuit will be insignificant. Cable and raceway schedules have been generated and will be attached to the IWP. The DC power supply will be installed in an enclosure mounted near the transmitter. A valve manifold will be provided for testing and calibration of the transmitter.

On the vertical portion of the piping, a flow restricting orifice will be installed to limit the flow rate to approximately 116 gpm. A manual 2 inch, A105 carbon steel globe valve, Newco model no. 215S-FS2, will replace the existing 1 1/2 inch globe valve, AF-15. This valve is at the boundary between the seismic and non-seismic portions of the recirc line piping. The vertical section of the recirc line for the 1P29 Aux Feedwater pump will be rerouted from the west side of electrical box 1RK-38 to the east side of the box. The recirc line will tie into the Condensate Storage Tank return header via a sockolet to be installed 6 inches south of the existing tee. The existing 1 1/2x 4 inch tee will be capped. This will be done to facilitate construction since the close clearances around the header piping make welding in a new tee extremely difficult.

The piping class up to AF-15 is listed as "DB". Per the specification this class calls for carbon steel pipe and fittings. For this modification, stainless steel was used and this fact was accounted for in all design calculations.

A new 3X2 relief valve will be installed on the common header to the Condensate Storage Tank on the 3 inch header immediately outside the Aux Feedwater pump room. This line is seismically qualified so calculations were done to determine the effect that the addition of the relief valve had on the seismic adequacy. Per calculation N-91-040 the effect was acceptable. The relief valve will be installed at this location since good access is still available and if the valve discharges, no cable trays, emergency lighting, controls, or security systems can get wet. The relief valve will be orientated so that the discharge is facing the wall. The relief valve will be set for 50 psig with a capacity of 200 gpm. The existing relief valve will be removed and the piping capped.

New setpoints for 1dPIS-4002 will be set at 145 gpm-valve closed with increasing pressure and 110 gpm-valve open with decreasing pressure. These changes will allow the recirc line to perform its pump protection function.

Calculation N-91-032 estimated the effect the increased size of the recirc line would have on the flow rates to the steam generators if AF-4002 stuck open. Flow to the steam generators may be reduced to 162 gpm per steam generator if this failure occurs with a steam generator pressure of 1100 psig. The 100 gpm per steam generator required in the FSAR accident analyses is still available. In addition the manual valve AF-15 can be used to isolate the recirc line or air to the control valve can

isolated. Calculation N-91-007 was used to verify that there is more than 5 minutes for manual action to isolate the recirc line. AF-4002 has position indication in the control room so that this failure can be identified. Operating procedures will be updated with instructions on the use of the three-way valve. AF-4002 was recently added to the ASME Section XI test program and is verified to open and close on IT-290.

The new recirc line was seismically analyzed by S&L. New supports will be added at the bonnet to operator flange on AF-4002 and at the manual globe valve. One existing restraint will be removed.

Parts have been ordered on the following purchase orders:

P.O. 183698	2x3 Relief Valve
P.O. 183706	Flow Restricting Orifice
P.O. 181528	Power Supply and Transmitter Interface
P.O. 183687	2 inch 1500# Control Valves
P.R. AA010014	QA Stainless Steel Elbows, 2" Piping
P.O. 184860	Stainless Steel Piping, Elbows, Flanges, Socklets, Caps
P.O. 185009	2 inch 1500# Globe Valve
P.O. 185010	Flow Orifice Plate and Flanges
P.O. 184161	Flow Transmitters
P.O. 160141	NEMA/EEMAC Type 12 Enclosures
R.S. Stock 9041389	2 inch 1500# Lift Check Valve

The modification for 1P29 will be completed during the 1991 Unit 1 refueling outage. The isolation for this work will result in the recirc lines for pumps P38A, P38B, and 2P29 being out of service in addition to the 1P29 recirc line. P38A, P38B, and 2P29 pumps will not be out of service since discharge paths to the steam generators will be lined up to compensate for the isolation of the recirc lines. Administrative controls will be established to minimize the the potential for damage to P38A, P38B, and 2P29 pumps during the time that the tie-in to the common recirc discharge line is installed for 1P29. Installation will be completed so as to minimize the time that the recirc lines for the P38A, P38B, and 2P29 pumps are out of service.

After installation the new 1P29 pump recirc line will be hydrostatic tested by Operations and operationally tested by running IT-08.

Reference Drawings:

1. Bechtel P-118, Aux F.W. Pump Suction from Storage Tanks T-24A&B, Rev.5.
2. Bechtel P-117, Aux F.W. Pump Suction from Storage Tanks T-24A&B, Rev.5.
3. Bechtel P-103, Emergency Feedwater Pumps to Main Feedwater Lines 4" & 3" DB-3, Rev.7
4. Bechtel P-142, Emergency Feedwater from CTMT Penetration P-5 to Main Feedwater EB-9 EB-10 Inside (CTMT), Rev.3
5. Bechtel P-142, Emergency Feedwater from DB-3 into CTMT to Main Feedwater 3"-EB-10, Rev.5.
6. Westinghouse 499B466 Sh.816, Elementary Wiring Diagram - Turb. Driven Aux. F.W. Pump Bypass Valve, Rev.4.
7. Bechtel M-217, Piping & Instrumentation Diag. Auxiliary Feedwater System, Rev.46.

DESIGN VERIFICATION NOTICE

Title of Document FINAL DESIGN

Document No. MR 88-099 *A Rev. _____ Date 3/25/91

Design Verification Method: Design Review Alternate Calcs
 Qualification Testing

Reviewer: T. D. MIELKE

REVIEW CHECKLIST CONSIDERATIONS:

	YES	NO	N/A
1. Were the inputs correctly selected and incorporated into design?	✓	_____	_____
2. Are assumptions necessary to perform the design activity adequately described and reasonable? Where necessary, are the assumptions identified for subsequent reverifications when the detailed design activities are completed?	✓	_____	_____
3. Are the appropriate quality and quality assurance requirements specified?	✓	_____	_____
4. Are the applicable codes, standards, and regulatory requirements including issue and addenda properly identified and are their requirements for design met?	✓	_____	_____
5. Have applicable construction and operating experience been considered?	✓	_____	_____
6. Have the design interface requirements been satisfied?	✓	_____	_____
7. Was an appropriate design method used?	✓	_____	_____
8. Is the output reasonable compared to inputs?	✓	_____	_____
9. Are the specified parts, equipment and processes suitable for the required application?	✓	_____	_____
10. Are the specified materials compatible with each other and the design environmental conditions to which the material will be exposed?	✓	_____	_____
11. Have adequate maintenance features and requirements been specified?	✓	_____	_____
12. Are accessibility and other design provisions adequate for performance of needed maintenance and repair?	✓	_____	_____

DESIGN VERIFICATION NOTES (continued)

- | | | | |
|---|-------|-------|-------|
| 13. Has adequate accessibility been provided to perform the inservice inspection expected to be required during the plant life? | _____ | _____ | ✓ |
| 14. Has the design properly considered radiation exposure to the public and plant personnel? | _____ | _____ | ✓ |
| 15. Are the acceptance criteria incorporated in the design documents sufficient to allow verification that design requirements have been satisfactorily accomplished? | ✓ | _____ | _____ |
| 16. Have adequate pre-operational and subsequent periodic test requirements been appropriately specified, including acceptance criteria? | ✓ | _____ | _____ |
| 17. Are adequate handling, storage, cleaning, and shipping requirements specified? | _____ | _____ | ✓ |
| 18. Are adequate identification requirements specified? | ✓ | _____ | _____ |
| 19. Are requirements for records adequately specified? | ✓ | _____ | _____ |
| 20. Will the change remain within the analyzed or specified capabilities of any affected equipment? | ✓ | _____ | _____ |
| 21. Has a field inspection been done? | ✓ | _____ | _____ |
| 22. Have impacts on other systems been identified? | ✓ | _____ | _____ |

COMMENTS: None _____ Attached ✓ (Use Form QP 5-3.1)

Reviewed by: *[Signature]* Date 4/2/91

Approval by: *WBJ fromm for ACR* Date 4/12/91

FINAL DESIGN CHECKLIST

Title of Document Inceased Aux Feedwater Pump Mini-Recirc Line Flow Capacity
 Document No. MR 88-099A Rev. 0 Date 3-18-91

INSTRUCTIONS:

- A. Answer all questions in the checklist: (Note: if an entire section is not applicable, the section heading (e.g. 2.0 Mechanical Design Criteria) may be marked "NA" and a line drawn through the other items.)
- B. A short explanation should be provided for the following two cases: (1) questions marked (*) which are answered No and (2) questions not marked (*) answered Yes. The explanation may be noted on this checklist or on QP 3-2.3, Final Design Checklist Explanation Sheet. Designer indicates answers using an (X). Reviewer indicates answers using a (✓).

REVIEW CHECKLIST CONSIDERATIONS:

	YES	NO	N/A
1. Are any of the general design criteria (FSAR, Section 1.3) applicable?	___	<u>X✓</u>	___
2. Mechanical Design Criteria			___
Will the change:			
a. Affect seismic boundaries?	___	<u>X✓</u>	___
b. Affect seismically qualified equipment?	<u>X✓</u>	___	___
c. Require seismic category "2 over 1" analysis? <i>Seismic reanalysis of the AFW recirc is being completed by Sargent & Lundy.</i>	___	<u>X✓</u>	___
d. Affect the assigned system design pressure or temperature?	___	<u>X✓</u>	___
*e. Be of a material compatible with the existing installation?	<u>X✓</u>	___	___
f. Require identification of applicable ASME B&PV codes and standards? <i>AF-400a is verified manufactured in accordance with ASME Section III.</i>	<u>X✓</u>	<u>gf</u>	___
g. Require State of Wisconsin Administrative code permits/approvals?	___	<u>X✓</u>	___
*h. Have materials, protective coatings, and corrosion characteristics compatible with existing plant components?	<u>X✓</u>	___	___

	YES	NO	N/A
i. Add a system/component to be included in the ASME B&V Section XI Inservice Inspection Program?	<u>90</u>	<u>X</u> ✓	_____
j. Require a new penetration in a primary system boundary?	_____	<u>X</u>	_____✓
k. Increase the potential for flooding?	_____	<u>X</u> ✓	_____
l. Degrade existing flood barriers?	_____	<u>X</u> ✓	_____
3. Electrical Design Criteria			_____
Will the change:			
a. Affect the station electrical system?	_____	<u>X</u> ✓	_____
b. Affect the station grounding or lightning protection system?	_____	<u>X</u> ✓	_____
*c. Be compatible with existing electrical insulation and wiring?	<u>X</u> ✓	_____	_____
d. Create an electrical problem in any of its failure modes?	_____	<u>X</u> ✓	_____
*e. Be compatible with service transformer capacity?	<u>X</u> ✓	_____	_____
f. Make any vital circuit susceptible to ground?	_____	<u>X</u> ✓	_____
g. Require redundancy, diversity, and separation?	_____	<u>X</u> ✓	_____
h. Require State of Wisconsin Administrative Code permits/approval?	_____	<u>X</u> ✓	_____
i. Be seismically qualified?	_____	<u>X</u> ✓	_____
4. Mechanical Service System			_____
Will the change:			
a. Require service water?	_____	<u>X</u> ✓	_____
b. Require closed loop cooling?	_____	<u>X</u> ✓	_____
c. Require instrument air? THIS WILL DEUSE THE EXISTING AIR SUPPLY.	<u>X</u> ✓	_____	_____
d. Require service air?.	_____	<u>X</u> ✓	_____
e. Increase heating, ventilation, or air conditioning (HVAC) loading?	_____	<u>X</u> ✓	_____

	YES	NO	N/A
f. Require demineralized water?	_____	<u>X</u> ✓	_____
g. Require raw water?	_____	<u>X</u> ✓	_____
h. Affect any other mechanical service system?	_____	<u>X</u> ✓	_____
i. Require lubrication?	_____	<u>X</u> ✓	_____
j. Require an independent means of pressure relief? Relief valve will be installed between AF-15 and Condensate Storage Tank Valve no. 1.	<u>X</u> ✓	_____	_____
5. Electrical Distribution System	_____	_____	_____
Will the change:			
a. Affect electrical system capacity, output, or voltage?	_____	<u>X</u> ✓	_____
b. Add more emergency diesel and/or station battery loading?	_____	<u>X</u> ✓	_____
c. Add load to a vital bus?	_____	<u>X</u> ✓	_____
d. Add load to a non-vital bus? Transmitter requires 10.5 to 55 Vdc.	<u>X</u> ✓	_____	_____
e. Add new raceways? A SHORT RUN OF CONDUIT WILL BE INSTALLED.	✓	<u>X</u> ✓	_____
f. Add cables to existing electrical raceways?	_____	<u>X</u> ✓	_____
g. Be routed through a fire wrapped cable tray?	_____	<u>X</u> ✓	_____
*h. Comply with thermal and electrical separation requirements?	<u>X</u> ✓	_____	_____
*i. Comply with protective relaying requirements of equipment and systems?	<u>X</u> ✓	_____	_____
6. Fire Protection	_____	_____	_____
Will the change:			
a. Affect fire protection requests listed in Section 6.1.1 of the FPER?	<u>X</u> ✓	_____	_____
b. If the answer to "a" is yes, an evaluation must be performed per Section 6.2.2 of the FPER. Evaluation is attached.	<u>X</u> ✓	_____	_____
c. Affect access to a fire zone, fire protection equipment or Appendix R safe shutdown equipment?	_____	<u>X</u> ✓	_____
d. Open a fire barrier?	_____	<u>X</u> ✓	_____

YES NO N/A

- e. Affect fire protection system performance? YES NO N/A
- f. Increase combustible loading in a room? YES NO N/A
- g. Based on FPER Section 7.3, will the change affect the existing fire protection features of an Appendix R safe shutdown fire zone? YES NO N/A
- h. Based on FPER Sections 4.4 and 4.5, will the change add to, delete from, or revise the listed systems and components? YES NO N/A
- i. If the answer to any item c through h is yes, a reevaluation must be performed per Section 6.2.10 of the FPER. YES NO N/A

7. Security System

Will the change:

- a. Be in a vital area?
Work will be in the Aux FW Pump Room YES NO N/A
- b. Require work near a vital area? YES NO N/A
- c. Require work within 20' of fence? YES NO N/A
- d. Affect security equipment and documents (including those containing safeguards information)? YES NO N/A
- e. Affect access controls? YES NO N/A

8. Structural Design Criteria

Will the change:

- a. Add weight between existing pipe supports, hangers, or foundations? *Analysis being completed by Scarycut & Lurdy.* YES NO N/A
- b. Require addition of new supports, hangers, or foundations? *See above.* YES NO N/A
- c. Affect stress calculations of pipe? *See above.* YES NO N/A
- d. Affect the loading or load capabilities of existing embeds or other anchor points? YES NO N/A
- e. Require changes to existing equipment foundations? YES NO N/A
- f. Affect accessibility of any equipment? YES NO N/A

	YES	NO	N/A
g. Require a floor or wall loading analysis?	___	<u>X</u> ✓	___
h. Affect or be impacted by masonry block walls?	___	<u>X</u> ✓	___
i. Decrease free volume of containment?	___	<u>X</u>	✓
j. Change the amount of exposed aluminum in containment?	___	<u>X</u>	✓
*k. Introduce materials into containment that could affect sump performance or lead to equipment degradation? <i>No equipment for this modification is located inside containment</i>	___	<u>X</u>	✓
l. Create an external or internal missile hazard?	___	<u>X</u> ✓	___
m. Be affected by winds or storms?	___	<u>X</u> ✓	___
n. Add a dynamic or potentially dynamic load to the system?	___	<u>X</u> ✓	___
o. Affect wall stress calculations for concrete cubicles or structures?	___	<u>X</u> ✓	___
p. Require core drills, expansion anchors, or re-bar cuts? <i>EXPANSION ANCHORS WILL BE USED ON SUPPORTS.</i>	✓	<u>X</u>	___
q. Require clearance review for seismic movement or thermal expansion considerations? <i>Analysis being completed by Sargeant & Lundy.</i>	<u>X</u> ✓	___	___
r. Change plant drainage/backfill requirements?	___	<u>X</u> ✓	___
s. Require protection from high energy line break jet?	___	<u>X</u> ✓	___
t. Require a penetration in the containment boundary?	___	<u>X</u> ✓	___
u. Require State of Wisconsin Administrative Code permits/approvals?	___	<u>X</u> ✓	___

9. Operability

Will the change:

*a. Require construction verification and/or start-up (operability) testing? <i>A hydrostatic test will be required. AF-4002 operability will be tested for proper operation.</i>	<u>X</u> ✓	___
b. Require additional operations or maintenance staff?	___	<u>X</u> ✓
c. Require specially trained operators or maintenance personnel?	___	<u>X</u> ✓
d. Require procedure changes? <i>Procedure changes for the three-way air valve will be</i>	<u>X</u> ✓	✓

	YES	NO	N/A
e. Require a testability review?	_____	<u>X</u> ✓	_____
f. Require special testing procedures or equipment or impact other systems during testing?	_____	<u>X</u> ✓	_____
g. Potentially impact other systems, components, or structures.	_____	<u>X</u> ✓	_____
10. Hydraulic Design Criteria			_____
Will the change:			
a. Affect pump NPSH?	_____	<u>X</u> ✓	_____
b. Affect calculated pipe pressure drop?	<u>X</u> ✓	_____	_____
c. Affect fluid pressure?	<u>X</u> ✓	_____	_____
d. Affect fluid velocity?	<u>X</u> ✓	_____	_____
e. Affect system capacity or output?	<u>X</u> ✓	_____	_____
<p>See Calculations N-91-031 and N-91-032 and the Final Design Description for the analysis. No AFFECT ON</p>			
11. Chemistry Effects SYSTEM OPERABILITY.			_____
Will the change:			
a. Be a potential source of chemical contaminants? SS PIPE WILL BE FLUSHED & WIPED DOWN PRIOR TO INSTALLATION ✓	_____	<u>X</u> ✓	_____
b. Require establishment of chemistry limits?	_____	<u>X</u> ✓	_____
c. Require any routine chemical analyses?	_____	<u>X</u> ✓	_____
d. Require provisions for sampling?	_____	<u>X</u> ✓	_____
e. Require chemical additives?	_____	<u>X</u> ✓	_____
f. Affect presently established chemistry limits?	_____	<u>X</u> ✓	_____
12. ALARA Considerations			_____
Will the change:			
a. Require an ALARA review be completed?	_____	<u>X</u>	<u>✓</u>
b. Increase radiation hazards?	_____	<u>X</u>	<u>✓</u>

YES NO N/A

13. Environmental Conditions

Will the change:

- a. Require special handling, shipping, or environmental conditions for storage or construction? ___ X✓
- b. Be subject to adverse environmental conditions during storage or construction? ___ X✓
- *c. Require environmental qualification (EQ)? ___ X✓
- d. Be attached to an EQ system/component? ___ X✓
Equipment not required to operate in a harsh environment.
- e. Modify HVAC requirements in the area? ___ X✓
- f. Change environmental parameters (e.g., temperature radiation, humidity)? ___ X✓

14. Industrial Safety

Will the change:

- a. Create a personnel hazard? ___ X✓
- b. Introduce hazardous material into the plant? ___ X✓
- c. Affect evacuation routes? ___ X✓
- d. Require that electrical equipment be grounded? X✓ ___
Enclosure will be grounded.
- *e. Meet OSHA regulations? X✓ ___ gp

15. Instrumentation and Control ___

Will the change:

- *a. Have sufficient instruments for operators to monitor the process? X✓ ___ ___
- *b. Have appropriate instrument scales? X✓ ___ ___
- *c. Have the instruments, control switches, and indicating devices been appropriately located for human factors (both for operational and maintenance)? X✓ ___ ___
- *d. Have alarms for off-normal conditions? ___ X✓ ___
Instrumentation is for test indication only (no control function.)
- *e. Be capable of or require remote and/or automatic operation? ___ X✓ ___
Instrumentation is for local indication only

- | | YES | NO | N/A |
|--|-----------|-----------|-------|
| *f. Be capable of or require manual operation? | <u>X✓</u> | _____ | _____ |
| g. Require calibration and maintenance requirements for the instruments to be specified? | _____ | <u>X✓</u> | _____ |
| *h. Have specified the instruments with proper range and accuracy? | <u>X✓</u> | _____ | _____ |

16. Failures Modes and Effects Analysis

Note: This section is applicable to all modifications.
 See IEEE 352-1975 "IEEE Guide for General Principles of Reliability Analysis of Nuclear Power Generating Station Protective System"

Is it necessary that the design consider:

- | | | |
|---|-----------|-------|
| a. How each portion of the configuration change may conceivably fail? | <u>X✓</u> | _____ |
| b. What mechanisms might produce these modes of failure? | <u>X✓</u> | _____ |
| c. What the effects could be if the failure did occur? | <u>X✓</u> | _____ |
| d. If the postulated failure is in a safe or unsafe direction? | <u>X✓</u> | _____ |
| e. How the failure would be detected? | <u>X✓</u> | _____ |
| f. What inherent provisions are included to compensate for the failure? | <u>X✓</u> | _____ |
- See 50.59 for analysis of a-f above.

17. Installation

Will the change:

- | | | |
|---|-----------|-----------|
| a. Present installation impacts on plant operations?
<i>Must be done during Unit I refueling outage.</i> | <u>X✓</u> | _____ |
| b. Present impacts on plant operations due to the sequence of activities?
<i>See above</i> | <u>X✓</u> | _____ |
| c. Present impacts on plant operations due to the sequence of installation?
<i>See above.</i> | <u>X✓</u> | _____ |
| d. Will the installation activities increase the probability for, or consequences of flooding? | _____ | <u>X✓</u> |

YES NO N/A

18. QA Requirements

Will the change:

- a. Affect QA-scope systems or boundaries? X ✓
- b. Aux Feed water
Require material certification? X ✓
- c. For control valve, check valve, and QA fitting & piping
Require personnel qualifications? X ✓
For welding

19. Operating Experience

Will the change:

- a. Incorporate new types/modes of equipment not presently used at PBNP? The transmitters are new but were requested by I&C. X ✓
- b. Benefit from a database search of the NODIL, NPRDS, CHAMPS, INPO Keywords, or other databases? gr X ✓

Designed by: Julie Pederson

Date 3-18-91

Reviewed by: [Signature]

Date 3/24/91

Comments: None Attached on QP 5-3.1

Resolution by: Julie Pederson

Date 4-8-91

NUCLEAR POWER DEPARTMENT
DOCUMENT REVIEW

3	Doc. Review Package No.
Sheet _____ of _____	

INITIATOR	1	Document Title/Number/Revision/Date FINAL DESIGN OF MR 88-099X-A		
	2	To: _____	Location: _____	Trans. #: _____
		From: _____	Date: _____	Supt. Approval: _____
PLEASE REVIEW THIS DOCUMENT AND RETURN COMMENTS PRIOR TO _____				

BLOCKS 4-6 TO BE COMPLETED BY REVIEWING ORGANIZATION	6	To: J.A. PEDERSON	Location: MILW.	Trans. #: _____
		From: TDM	Date: 4/3/91	Supt. Approval: _____
		FEEDBACK REQUESTED: <input type="checkbox"/> ORAL <input checked="" type="checkbox"/> WRITTEN <input type="checkbox"/> NONE		

BLOCKS 4-6 TO BE COMPLETED BY REVIEWING ORGANIZATION	4	Comments:	7	Resolution:
		<ol style="list-style-type: none"> SK-001 BOM: THE ELBOW UPSTREAM OF THE RESTRICTING ORIFICE SHOULD BE A 3000#, SS, SW, FITTING. ATTACH COPIES OF THE P.O.S TO THE PACKAGE (OR VENDOR SPEC. SHEETS) SO THAT DESIGN CRITERIA FOR THE VARIOUS PIECES OF EQUIPMENT CAN BE VERIFIED. WHAT IS BEING REFURBISHED ON THE CONTROL VALVES AND WHY? ADD THIS TO THE DESIGN DESCRIPTION. THE PIPING CLASS UP TO THE MANUAL GLOBE VALVE IS DB. THIS CLASS CALLS FOR CS PIPE AND FITTINGS. THIS MOD INSTALLS NOTHING BUT SS. THE DISCREPANCY SHOULD BE DISCUSSED IN THE DESIGN DESCRIPTION. THE ITEM #'S SHOULD BE SHOWN ON THE CONTROLLED COPIES OF THE DRAWINGS, SINCE THESE ARE WHAT IS TO BE USED IN THE FIELD. 	<p>Done</p> <p>Done</p> <p>Done</p> <p>Done</p> <p>Done</p>	

5	Comments By/Date:	8	Resolution By/Date:
	J. Whilk 4/3/91		Julie Pederson 4-8-91
	_____	9	Review Date:
	_____		Whilk 4/8/91

NUCLEAR POWER DEPARTMENT
DOCUMENT REVIEW

3 Doc. Review
Package No.
Sheet _____ of _____

INITIATOR	1 Document Title/Number/Revision/Date <u>FINAL DESIGN OF MR 88-099#A</u>
	2 To: _____ Location: _____ Trans. #: _____ From: _____ Date: _____ Supt. Approval: _____ PLEASE REVIEW THIS DOCUMENT AND RETURN COMMENTS PRIOR TO _____

BLOCKS 4-6 TO BE COMPLETED BY REVIEWING ORGANIZATION	6 To: <u>JA PEDERSON</u> Location: <u>Milw.</u> Trans. #: _____ From: <u>TD MIELKE</u> Date: <u>3/25/91</u> Supt. Approval: _____ FEEDBACK REQUESTED: <input type="checkbox"/> ORAL <input checked="" type="checkbox"/> WRITTEN <input type="checkbox"/> NONE
--	---

BLOCKS 4-6 TO BE COMPLETED BY REVIEWING ORGANIZATION	4 Comments:	7 Resolution:
	<p>1. CALC. 91-031 IS MISSING FROM THE PACKAGE. ATTACH IT TO PACKAGE.</p> <p>2. ADD SKETCHES TO SHOW LOCATION & DETAILS OF NEW RELIEF VALVE AND VENT VALVE. REFERENCE PARTS TO MATERIAL LIST (BOM).</p> <p>3. MAKE CHANGES TO IWP TO INCLUDE:</p> <ul style="list-style-type: none"> - PREFAB WORK - TEMPORARY CONTROL OF OTHER 3 PUMPS - INSTALLATION OF TEMPORARY OPERATOR AIDS - DRAINING SEQUENCE CHANGE - ONLY ONE HYDRO ON RECIRC HEADER. - TEMPORARY SUPPORT FOR PORTION OF NEW RECIRC PIPE. - I&C PORTION (AS REQUESTED BY I&C) <p>4. ADDRESS WHETHER OR NOT A TEMPORARY MOD IS REQUIRED FOR ADJUSTING DISCHARGE AGVs ON THE OTHER PUMPS.</p> <p>5. ON FINAL DESIGN FORM:</p> <ul style="list-style-type: none"> - MAKE COPIES OF ORIGINAL FIRST 3 PAGES. USE COPIES FOR EACH DESIGN PACKAGE. - SIGN BOTTOM OF PAGE 3. - FILL OUT TOP OF PAGE 4, FINAL DESIGN SCOPE & DESCRIPTION. LIST OTHER PLANNED DESIGN PACKAGES. SIGN FORM. 	<p>Done</p> <p>Done</p> <p>- Done</p> <p>✓ Done</p> <p>- Done. Was determined to not be necessary per J McNameara & B Fromm on 3-27-91.</p> <p>- Done</p> <p>- Done</p> <p>- Done</p>

5 Comments By/Date: <u>TD Mielke 3/25/91</u>	8 Resolution By/Date <u>Julia Pederson 4/4/91</u>
_____	9 Review Date <u>TD Mielke 4/2/91</u>

Copies to: Initiator

NUCLEAR POWER DEPARTMENT
DOCUMENT REVIEW

3	Doc. Review Package No.
Sheet <u>1</u> of <u> </u>	

INITIATOR	1	Document Title/Number/Revision/Date MR 88-099 #A and associated IWP			
	2	To: <u> </u>	Location: <u> </u>	Trans. #: <u> </u>	
BLOCKS 4-6 TO BE COMPLETED BY REVIEWING ORGANIZATION		From: <u> </u>	Date: <u> </u>	Supt. Approval: <u> </u>	
	PLEASE REVIEW THIS DOCUMENT AND RETURN COMMENTS PRIOR TO <u> </u>				
	6	To: <u>JKP/TDM</u>	Location: <u> </u>	Trans. #: <u> </u>	
		From: <u>JAP</u>	Date: <u>4-8-91</u>	Supt. Approval: <u> </u>	
	FEEDBACK REQUESTED: <input type="checkbox"/> ORAL <input checked="" type="checkbox"/> WRITTEN <input type="checkbox"/> NONE				
	4	Comments: Mod design		7	Resolution:
		<p>1. Final design states that a minimum flow of 100 gpm is required, and IdPIS-4002 is to be calibrated to open at 100 gpm ↓. This does not account for instrument inaccuracy and calibration tolerances. IdPIS-4002 should be set >100 gpm to ensure that the 100 gpm minimum is always met.</p> <p>2. Mod has two interfaces between a seismic class I and lower class system. Appendix A of the FSAR says that in this case the interface is a normally closed valve or a valve which is capable capable of remote operation from the control room. This is not true for this design.</p> <p>3. Final design states a 3-way valve will be used/installed for failing air to AF-4002. This does not agree with IWP.</p> <p align="center">IWP</p> <p>4. No required plant conditions specified in IWP. With specified tagout this creates the potential for steam to be supplied to IP29 without a suction or discharge path.</p>		<p>Done. Changed to 110 gpm per recommendation of N. Hoefert</p> <p>Whole recirc line was seismically analyzed. Boundary will be removed</p> <p>This was a typo. Station was removed from IWP</p> <p>Done. IMS-126 was added to tag out.</p>	
	5	Comments By/Date: <u>John A. Pal 4-8-91</u>		8	Resolution By: <u>Julie Pederson 4-12-91</u>
		<u> </u>		9	Review: <u>JAP 4-12-91</u>

NUCLEAR POWER DEPARTMENT
DOCUMENT REVIEW
CONTINUATION

Sheet 2 of 2

1	Document Title/Number/Revision/Date MR 88-099 X A and IWP	
4	Comments: 5. Procedure ^{drawings} requires more details on the installation of the new transmitter, to include <ul style="list-style-type: none"> - Installation of a valve manifold - Installation of test connections - Wiring diagram for power supply and transmitter 6. ITC requires a spec sheet on the flow orifice for transmitter calibration. 7. Per D.P. Hartjes (ITC) AF-4012/4019 should be set for a minimum of 10% open by adjusting the respective controllers and not the positioners. 8. P38A and P38B should be operated after their discharge valve is opened to ensure sufficient flow exists. 9. Final design states that the min. flow is 100 gpm, this is acceptable for annual accumulated run time of < 60 hrs. No where in the package is the basis for 60 hrs documented. How was 60 hrs determined to be acceptable? 10. Acceptability of the temporary support of the 1P29 recirc line and its affect on the common recirc line with respect to seismic concerns/operability should be included in the final design.	7
		Resolution: Spoke to N. Heft sketches and existing manuals are sufficient, valve manifold is pre-mounted. Was added to pre-requisites, can't add until office arrives Done. Per J. Reisenbuehler AF-4012 and AF-4019 will be cycled, the pumps will not be run. The steam driven pumps are rarely run on recirc (EG condensers). The run times for the pumps since 1985 were reviewed and the pumps were run an average of 40 min. per test with a max. of 2.37 minutes. 12 times 2.37 minutes is 47.4 hours which is a good margin below 60 hours. Discussed with Blunde & M. Wozniak. Statement added to IWP.

BLOCK 4 TO BE COMPLETED BY REVIEWING ORGANIZATION

NUCLEAR POWER DEPARTMENT
DOCUMENT REVIEW

7 Doc. Review
Package No.

Sheet 1 of 1

INITIATOR	1 Document Title/Number/Revision/Date IWP 88-099	
	2 To: <input type="text"/> Location: <input type="text"/> Trans. #: _____ From: _____ Date: _____ Supt. Approval: _____ PLEASE REVIEW THIS DOCUMENT AND RETURN COMMENTS PRIOR TO _____	
BLOCKS 4-6 TO BE COMPLETED BY REVIEWING ORGANIZATION	6 To: <u>MIKE/PERSON</u> Location: <u>PBNP</u> Trans. #: _____ From: _____ Date: <u>4/11/91</u> Supt. Approval: _____ FEEDBACK REQUESTED: <input type="checkbox"/> ORAL <input type="checkbox"/> WRITTEN <input checked="" type="checkbox"/> NONE	
	4 Comments: 1) Why PB-196 NOT PB-220 FOR Wiring <u>Section 2.4</u> May want to have a V.T. AT. Fit-up & Root Pass. This should be stated instead of a general V.T. <u>Section 3.1.1.B</u> Should Temp Support be in place prior to cutting the 1/2" rebar line <u>App - App Section Prescribing Removal of Temp Support</u>	7 Resolution: PB-220 is for safety related wiring. The transmitters are <u>not</u> safety-related. (No control function - test indication only.) No, not necessary Done.
	5 Comments By/Date: <u>[Signature]</u> <u>4/11/91</u>	
8 Resolution By/Date: <u>[Signature]</u> <u>4-</u>		
9 Review Da		

Copies to: Initiator

POINT BEACH NUCLEAR PLANT

FIRE PROTECTION CONFORMANCE CHECKLIST

MR Number 88-099XA Unit 1 _____ Unit 2 _____ Common Facilities X
System Aux Feedwater Location Fire Zone 304

NOTE: FPER 6.2.2.1 Complete Sections 1.0 - 4.6 for industrial fire safety.
FPER 6.2.2.2 Complete Sections 1.0 - 10.5 for Appendix R compliance.

1.0 PLANT ACCESS

1.1 Does the modification add/delete/revise any doors, walls, structures or equipment that may impede or alter access to a fire?

- Yes, go to 1.2
 No, go to 1.3

Comments: _____

1.2 Are alternate access routes available to the area of concern?

- Yes, go to 1.3
 No, go to 1.8, complete actions and resume at 1.3.

Comments: _____

1.3 Does the modification add/revise/remove ventilation that may either directly or indirectly alter air flow within an area or from area to area to impede access to a fire?

- Yes, go to 1.8, complete actions and resume at 1.4.
 No, go to 1.4

Comments: _____

1.4 Does the modification require installation of locks on previously unlocked doors or structural changes such as the addition/deletion/revision of walls, stairways, or doors?

- Yes, go to 1.5
 No, go to 1.6

Comments: _____

1.5 Does the installation of locks or structural changes affect the existing access/egress routes for fire fighting activity, safe shutdown equipment operations, and/or post-fire repairs?

- Yes, go to 1.8, complete actions and resume at 1.6.
 No, go to 1.6

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

1.6 Does the modification affect the Appendix R safe shutdown timelines (time and motion study for AOP-10A and AOP-10B contained in FPER Section 4.7)?

Yes, go to 1.8, complete actions and resume at 1.7.

No, go to 1.7

Comments: _____

1.7 Does the modification block safe shutdown equipment or a local control station required to be accessible for safe shutdown?

Yes, go to 1.8, complete actions and resume at 2.1.

No, go to 2.1

Comments: _____

1.8 The modification affects plant accessibility. List the access effect(s) and refer to FPER, Section 6.2.10, RESUME checklist completion.

Access Effects: _____

2.0 APPENDIX R BARRIERS

2.1 Does the modification delete any fire barriers/area appearing in FPER, Section 3.0?

Yes, go to 2.2

No, go to 2.3

Comments: _____

2.2 Has a new barrier/area been defined?

Yes, go to 2.3

No, go to 2.14, complete actions and resume at 2.3.

Comments: _____

2.3 Does the modification revise any existing fire barriers (e.g., changes to supporting structural steel, barrier thickness or material, etc.)?

Yes, go to 2.14, complete actions and resume at 2.4.

No, go to 2.4

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

2.4 Does the modification add/delete/revise any penetrations to fire barriers due to cables or pipes?

Yes, go to 2.5

No, go to 2.6

Comments: _____

2.5 Are the appropriate barrier penetration procedures specified?

Yes, go to 2.6

No, go to 2.14, complete actions and resume at 2.6.

Comments: _____

2.6 Does the modification add or replace any fire doors, frames or dampers?

Yes, go to 2.7

No, go to 2.8

Comments: _____

2.7 Do the new/replaced dampers/doors/frames meet requirements for rated fire barriers in the fire area and fire damper installation configurations as specified in FPER Section 7.3?

Yes, go to 2.8

No, go to 2.15, complete actions and resume at 2.8.

Comments: _____

2.8 Does the modification add or relocate any cable raceways to a location which presents intervening combustibles between redundant safe shutdown trains?

Yes, go to 2.9

No, go to 2.10

Comments: _____

2.9 Does the modification include installation of approved fire stops?

Yes, go to 2.10

No, go to 2.5, complete actions and resume at 2.10.

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

2.10 Does the modification add/delete/revise any cable to an existing raceway which presents intervening combustibles between redundant safe shutdown trains?

Yes, go to 2.11

No, go to 2.12

Comments: _____

2.11 Does the modification include installation/reinstallation of approved fire stops?

Yes, go to 2.12

No, go to 2.15, complete actions and resume at 2.12.

Comments: _____

2.12 Does the modification add/delete/revise any curb, dikes, or drains in the area as described in FPER Section 5?

Yes, go to 2.14, complete actions and resume at 2.13.

No, go to 2.13

Comments: _____

2.13 Does the modification obstruct, remove/revise any suppression system or water spray nozzles or plume impingement shields in the area?

Yes, go to 2.14, complete actions and resume at 3.1.

No, go to 3.1

Comments: _____

2.14 Do the affected barriers/fire areas protect safe shutdown components or cables?

Yes, go to 2.15

No, go to 2.16

Comments: _____

2.15 The modification impacts Appendix R compliance. List the affected items and refer to FPER, Section 6.2.10.1. RESUME checklist completion.

Affected Items: _____

2.16 The modification could impact fire protection commitments and/or codes. List the affected item and refer to FPER, Section 6.2.10.2. RESUME checklist completion.

Affected Items: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

3.0 FIRE PROTECTION SYSTEMS

3.1 Does the modification affect any portion of the fire protection system?

- Yes, go to 3.2
- No, go to 3.4

Comments: _____

3.2 Is the affected portion of fire protection system required for Appendix R safe shutdown compliance?

- Yes, go to 3.3
- No, go to 3.4

Comments: _____

3.3 Will the modified portion of fire protection systems meet the requirements of Appendix R as stated in the technical evaluations FPER Section 7.3?

- Yes, go to 3.4
- No, to go 3.18, complete actions and resume at 3.4.

Comments: _____

3.4 Does the modification add/delete/revise any fire protection system electrical components?

- Yes, go to 3.5
- No, go to 3.6

Comments: _____

3.5 Does the modification add/delete/revise anything that could impede the required fire protection system function?

- Yes, go to 3.17, complete actions and resume at 3.6.
- No, go to 3.6

Comments: _____

3.6 Does the modification add/delete/revise any fire detectors?

- Yes, go to 3.17, complete actions and resume at 3.7.
- No, go to 3.7

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

3.7 Does the modification revise any ventilation system flow patterns or structural arrangements which may affect fire detection/suppression capability?

Yes, go to 3.17, complete actions and resume at 3.8.

No, go to 3.8

Comments: _____

3.8 Does the modification affect the annunciator system of the fire detectors?

Yes, go to 3.17, complete actions and resume at 3.9.

No, go to 3.9

Comments: _____

3.9 Does the modification add any new suppression systems?

Yes, go to 3.10

No, go to 3.11

Comments: _____

3.10 Has a suppression effects analysis been performed?

Yes, go to 3.11

No, go to 3.18, complete actions and resume at 3.11.

Comments: _____

3.11 Does the modification delete any suppression systems?

Yes, go to 3.17, complete actions and resume at 3.12.

No, go to 3.12

Comments: _____

3.12 Does the modification revise any suppression systems (e.g., changes in size, spacing; or arrangement of nozzles, piping, or pipe hangers)?

Yes, go to 3.17, complete actions and resume at 3.13.

No, go to 3.13

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

3.13 Does the modification affect discharge characteristics of gaseous systems due to changes in room volume or ventilation systems?

- Yes, go to 3.17, complete actions and resume at 3.14.
- No, go to 3.14

Comments: _____

3.14 Does the design change affect the discharge of sprinklers due to structural/mechanical changes?

- Yes, go to 3.17, complete actions and resume at 3.15.
- No, go to 3.15

Comments: _____

3.15 Does the modification remove/revise any hose stations, hydrants, or fire extinguishers?

- Yes, go to 3.17, complete actions and resume at 3.16.
- No, go to 3.16

Comments: _____

3.16 Does the design change add/delete/revise any local or remote alarm actuation systems?

- Yes, go to 3.17, complete actions and resume at 4.1.
- No, go to 4.1

Comments: _____

3.17 Are the affected detection/suppression actuation system components located in a fire area/zone for Appendix R compliance?

- Yes, go to 3.18
- No, go to 3.19

Comments: _____

3.18 The modification impacts on Appendix R compliance. List the affected components and refer to FPER Section 6.2.10.1. RESUME checklist completion.

Affected Components: _____

3.19 The modification could impact fire protection commitments and/or codes. List the affected components and refer to FPER, Section 6.2.10.1. RESUME checklist completion.

Affected Components: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

4.0 COMBUSTIBLE LOADING/FIRE HAZARD

4.1 Does the modification increase combustible loading or fire hazard due to new cable installed in cable trays?

Yes, go to 4.4, complete actions and resume at 4.2.

No, go to 4.2

Comments: _____

4.2 Does the modification increase combustible loading or fire hazard due to lubricating oil or grease?

Yes, go to 4.4, complete actions and resume at 4.3.

No, go to 4.3.

Comments: _____

4.3 Does the modification increase the combustible loading or fire hazard due to the addition of ordinary combustibles or combustible liquids?

Yes, go to 4.4

No, fire protection checklist complete. Sign below item 4.6 or continue Appendix R checklist at item 5.1.

Comments: _____

4.4 Does the increase affect the established level of fire hazard for the given fire area stated in the technical evaluation contained in FPER Section 7.3? NOTE: Contact WE fire protection group if input is needed.

Yes, go to 4.6, complete actions and resume at 4.5.

No, go to 4.5

Comments: _____

4.5 Does the increase exceed the existing fire control design capabilities of fire protection features for the given fire area? NOTE: Contact WE fire protection group if input is needed.

Yes, go to 4.6, complete actions and sign fire protection checklist complete or continue Appendix R checklist at item 5.1.

No, fire protection checklist complete. Sign below item 4.6 or continue Appendix R checklist at item 5.1.

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

- 4.6 The modification impacts fire protection compliance. List the fire area and refer to FPER, Section 6.2.10. RESUME checklist completion.

Fire Area: _____

Conformance checklist completed in accordance with FPER Section 6.2.2.1.

By: Julie Peterson Date: 2/20/91

5.0 SAFE SHUTDOWN COMPONENTS

- 5.1 Does the modification require addition of a safe shutdown component?

Yes, go to 5.2

No, go to 5.5

Comments: _____

- 5.2 Will the new component support other safe shutdown systems or component(s)?

Yes, go to 5.3

No, go to 5.4

Comments: _____

- 5.3 Are the safe shutdown system(s) or component(s) which the new component will be supporting required to operate for a fire in the fire area in which the new component will be located?

Yes, go to 5.18, complete actions and resume at 5.4.

No, go to 5.4

Comments: _____

- 5.4 Is a redundant component located either outside of the fire area or provided with Appendix R, Section III.G.2 separation?

Yes, go to 5.5

No, go to 5.18, complete actions and resume at 5.5.

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

5.5 Does the modification require deletion of a safe shutdown component?

- Yes, go to 5.6
 No, go to 5.7

Comments: _____

5.6 Does a safe shutdown component exist that will perform the same function for which the component under consideration was required by AOP-10A and/or AOP-10B?

- Yes, go to 5.7
 No, go to 5.18, complete actions and resume at 5.7.

Comments: _____

5.7 Does the modification require revision of a safe shutdown component?

- Yes, go to 5.8
 No, go to 5.9

Comments: MR 88-099 modifies the recirc line on the
Aux FW Pumps

5.8 Will the revised shutdown component continue to perform its function required by AOP-10A and AOP-10B?

- Yes, go to 5.9
 No, go to 5.18, complete actions and resume at 5.9.

Comments: _____

5.9 Does the modification add/delete/revise safe shutdown equipment to the system flow path or boundary isolation from interconnecting systems?

- Yes, go to 5.11
 No, go to 5.10

Comments: _____

5.10 Does the modification add/delete/revise safe shutdown equipment to a connection to the system flow path or boundary isolation from interconnecting systems?

- Yes, go to 5.11
 No, go to 5.13

Comments: The recirc line for Aux FW ties the system to
the Condensate Storage Tank. The control valve which
provides the boundary isolation will be changed out.

FIRE PROTECTION CONFORMANCE CHECKLIST

5.11 Does the modification affect the operation of the system (e.g., changes in system flow rate, change in normal positions, etc.)?

Yes, go to 5.12

No, go to 5.13

Comments: _____

5.12 Does the modification violate the safe shutdown systems performance goals as presented in FPER Section 4.0?

Yes, go to 5.18, complete actions and resume at 5.13.

No, go to 5.13

Comments: _____

5.13 Does the modification affect any mechanical sub- or support components of safe shutdown components not listed on the safe shutdown equipment list (e.g., SOVs, check valves, etc.)?

Yes, go to 5.14

No, go to 5.16

Comments: _____

5.14 Does the modification to the sub- or support component affect the operability of its associated safe shutdown equipment?

Yes, go to 5.15

No, go to 5.16

Comments: The modified Aux FW Pump Recirc Line will be set to operate the same as the original recirc line under non-test conditions.

5.15 Will the safe shutdown equipment continue to perform its function required by AOP-10A and/or AOP-10B?

Yes, go to 5.16

No, go to 5.18, complete actions and resume at 5.16

Comments: _____

5.16 Does the modification add/delete/revise any electrical sub- or support components which support the identified safe shutdown component(s) (e.g., power supplies, relays, switches, motor operators)?

Yes, go to 5.17

No, go to 6.1

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

5.17 Do the sub- or support components impact the operability of associated safe shutdown equipment required by AOP-10A and/or AOP-10B?

- Yes, go to 5.18, complete actions and resume at 6.1.
- No, go to 6.1

Comments: _____

5.18 The addition/deletion/revision of safe shutdown components, sub- or support components affects safe shutdown. List the equipment and the affected systems and refer to FPER Section 6.2.10.1. RESUME checklist completion.

Safe Shutdown System(s), Components, Sub- or Support Component(s): _____

6.0 SAFE SHUTDOWN CABLE ASSOCIATED CIRCUITS AND SPURIOUS OPERATION

6.1 Does the modification require addition of a safe shutdown cable?

- Yes, go to 6.2
- No, go to 6.4

Comments: _____

6.2 Will the cable be routed in a fire area(s) where, if a fire is postulated, the associated safe shutdown component is required to be operable?

- Yes, go to 6.3
- No, go to 6.4

Comments: _____

6.3 Will the failure of the new cable cause the associated safe shutdown component to be inoperable?

- Yes, go to 6.19, complete actions and resume at 6.4.
- No, go to 6.4

Comments: _____

6.4 Does the modification require deletion of a safe shutdown cable?

- Yes, go to 6.5
- No, go to 6.7

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

6.5 Will the deletion of the cable affect local and/or remote control or indication capability of the associated safe shutdown component?

- Yes, go to 6.6
- No, go to 6.7

Comments: _____

6.6 Is the affected local and/or remote control or indication capability of the associated safe shutdown component required for Appendix R safe shutdown by AOP-10A and/or AOP-10B?

- Yes, go to 6.19, complete actions and resume at 6.7.
- No, go to 6.7

Comments: _____

6.7 Does the modification require revision or rerouting of an existing safe shutdown cable?

- Yes, go to 6.8
- No, go to 6.10

Comments: _____

6.8 Does the rerouting of the cable maintain the separation of unique trains required by Appendix R to achieve safe shutdown?

- Yes, go to 6.9
- No, go to 6.19, complete actions and resume at 6.10

Comments: _____

6.9 Will the revision of the cable affect the operability of the associated safe shutdown component?

- Yes, go to 6.19, complete actions and resume at 6.10.
- No, go to 6.10

Comments: _____

6.10 Does the modification require addition or revision of a circuit connected or to be connected to safe shutdown power supply?

- Yes, go to 6.11
- No, go to 6.12

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

6.11 Will adequate electrical coordination between the safe shutdown power supply feeder breaker and the added or revised component breaker or fuse exist?

- Yes, go to 6.12
- No, go to 6.19, complete actions and resume at 6.12.

Comments: _____

6.12 Does the modification require addition or revision of any non-safe shutdown circuits?

- Yes, go to 6.13
- No, go to 6.15

Comments: _____

6.13 Will the new or revised cables be equipped with circuit breakers, fuses or some kind of current limiting device?

- Yes, go to 6.15
- No, go to 6.14

Comments: _____

6.14 Will the new or revised cables share a common enclosure (raceway, panel, etc.) with safe shutdown cables?

- Yes, go to 6.19, complete actions and resume at 6.15.
- No, go to 6.15

Comments: _____

6.15 Does the modification add/delete/revise any safe shutdown components and/or high/low pressure interfaces which could operate spuriously?

- Yes, go to 6.16
- No, go to 6.17

Comments: _____

6.16 Could the addition/deletion/revision of the spurious safe shutdown components alter system operation and prevent the achievement of safe shutdown?

- Yes, go to 6.19, complete actions and resume at 6.17.
- No, go to 6.17

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

6.17 Does the modification add/delete/revise the circuits of any safe shutdown equipment listed in FPER Spurious Operations Table 4.7-1?

- Yes, go to 6.18
 No, go to 7.1

Comments: _____

6.18 Will the recommended resolution for mitigating the spurious operation listed in the table remain applicable after the modification?

- Yes, go to 7.1
 No, go to 6.19, complete actions and resume at 7.1

Comments: _____

6.19 The modification impacts safe shutdown. List the safe shutdown circuits and associated components and refer to FPER Section 6.2.10.1. RESUME checklist completion.

Safe Shutdown Circuits and Components: _____

7.0 EFFECTS ON EXEMPTIONS/EVALUATIONS

TE 304

7.1 Is the modification proposed to be implemented in a fire zone for which an exemption is noted in the technical evaluation in FPER Section 7.3?

- Yes, go to 7.6, complete actions and resume at 7.2.
 No, go to 7.2

Comments: _____

7.2 Does the modification add/delete/revise any safe shutdown or spurious components and/or cables?

- Yes, go to 7.6, complete actions and resume at 7.3.
 No, go to 7.3

Comments: _____

7.3 Does the modification increase the combustible loading or level of fire hazard (including intervening combustibles) in fire zone of concern?

- Yes, go to 7.6, complete actions and resume at 7.4
 No, go to 7.4

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

7.4 Does the modification add/delete/revise a detection or suppression system in the fire zone of concern?

Yes, go to 7.6, complete actions and resume at 7.5.

No, go to 7.5

Comments: _____

7.5 Does the modification affect any other means of fire protection (hatches, curbs, etc.)?

Yes, go to 7.6, complete actions and resume at 7.7

No, go to 7.7

Comments: _____

7.6 Does the modification violate a basis for the requested exemption?

Yes, go to 7.9

No, RESUME Checklist Completion

Comments: _____

7.7 Are the systems, components, or cables redundant to the systems, components, or cables affected by the modification located in fire zones for which other exemptions are noted in the technical evaluations in FPER Section 7.3?

Yes, go to 7.8

No, go to 8.1

Comments: _____

7.8 Does the modification violate a basis for these other exemption(s) (accessibility, low combustibile loading, barriers, equipment location, etc.)?

Yes, go to 7.9, complete actions and resume at 8.1.

No, go to 8.1

Comments: _____

7.9 The modification violates the basis for an exemption or evaluation. List the basis affected and refer to FPER Section 6.2.10.1. RESUME checklist completion.

Cables and Components: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

8.0 EMERGENCY LIGHTING

8.1 Does the modification add/delete/revise safe shutdown component(s) for which manual operation is required by AOP-10A?

Yes, go to 8.2

No, go to 8.4

Comments: _____

8.2 Is emergency lighting which meets the requirements of Appendix R, Section IIIJ provided at the component(s) and access/egress routes thereto?

Yes, go to 8.4

No, go to 8.3

Comments: _____

8.3 Does the modification add emergency lighting which meets the requirements of Appendix R, Section IIIJ at the added component(s) and access/egress routes thereto?

Yes, go to 8.4

No, go to 8.11, complete action and resume at 8.4

Comments: _____

8.4 Does the modification add/delete/revise an emergency lighting system or any emergency lights?

Yes, go to 8.5

No, go to 8.7

Comments: _____

8.5 Is the affected portion of the emergency lighting system required for Appendix R safe hot shutdown and/or fire fighting purposes?

Yes, go to 8.6

No, go to 8.7

Comments: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

8.6 Does the affected portion of emergency lighting system meet the requirements for intensity, coverage, and required battery capacity of the technical evaluation of emergency lighting capability at Point Beach Nuclear Plant, FPER Section 7.3?

- Yes, go to 8.7
 No, go to 8.11, complete action and resume at 8.7.

Comments: _____

8.7 Does the modification downgrade the ability to perform firefighting/safe shutdown activities efficiently during a blackout?

- Yes, go to 8.11, complete action and resume at 8.8.
 No, go to 8.8

Comments: _____

8.8 Does the modification involve any structural changes or equipment installations that may block the illumination path of an emergency light?

- Yes, go to 8.9
 No, go to 9.1

Comments: _____

8.9 Is the affected emergency light required for safe shutdown (e.g., required for illumination of safe shutdown component, local control station, or access/egress routes thereto)?

- Yes, go to 8.10
 No, go to 9.1

Comments: _____

8.10 Does the affected emergency light still meet the requirements of the technical evaluation of emergency lighting capability at Point Beach Nuclear Plant, FPER Section 7.3?

- Yes, go to 9.1
 No, go to 8.11, complete action and resume at 9.1.

Comments: _____

8.11 The modification impacts on Appendix R safe shutdown compliance. List the affected position of emergency lighting system and refer to FPER Section 6.2.10.1. RESUME checklist completion.

Emergency Lighting System: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

9.0 PLANT COMMUNICATIONS

9.1 Does the modification add/delete/revise plant communication systems?

- Yes, go to 9.2
- No, go to 9.4

Comments: _____

9.2 Is the affected portion of plant communication system require for Appendix R safe shutdown and/or fire fighting purposes?

- Yes, go to 9.3
- No, go to 9.4

Comments: _____

9.3 Does the modification add/delete/revise anything (e.g., antenna system, repeaters, power supplies, etc.) that could impede plant communications including radio transmission or reception?

- Yes, go to 9.6, complete action and resume at 9.4.
- No, go to 9.4

Comments: _____

9.4 Does the modification involve any structural changes that may impede radio transmission, reception, or other communication means?

- Yes, go to 9.5
- No, go to 10.1

Comments: _____

9.5 Will the affected communication system still perform its function?

- Yes, go to 10.1
- No, go to 9.6, complete actions and resume at 10.1.

Comments: _____

9.6 The modification impacts on safe shutdown. List the affected portion of plant communication system and refer to FPER Section 6.2.10.1. RESUME checklist completion.

Plant Communication System: _____

FIRE PROTECTION CONFORMANCE CHECKLIST

10.0 REACTOR COOLANT PUMP OIL COLLECTION SYSTEM

10.1 Does the modification affect any portion of the RCP oil collection system?

Yes, go to 10.2

No, Sign checklist complete below item 10.5.

Comments: _____

10.2 Does the modification affect the quantity of oil in the reactor coolant pumps?

Yes, go to 10.5, complete actions and resume at 10.3.

No, go to 10.3

Comments: _____

10.3 Does the modification affect the seismic design of the RCP oil collection system?

Yes, go to 10.5, complete actions and resume at 10.4.

No, go to 10.4

Comments: _____

10.4 Does the modification require the temporary removal of the RCP oil collection system during unit operation?

Yes, go to 10.5, complete actions and sign checklist complete.

No, sign checklist complete below item 10.5.

Comments: _____

10.5 The modification impacts on safe shutdown compliance. List the components of the affected portion of the RCP lube oil collection system and refer to FFER Section 6.2.10.1. RESUME checklist completion.

Components: _____

Conformance checklist completed in accordance with FFER Section 6.2.2.2.

By: Julie Pederson

Date: 2-21-91

2.27

DOCUMENTATION UPDATE SHEET AND CLOSEOUT CHECKLIST

Sign for
Acceptance/
Closeout
Requirements

N/A Required For
Acceptance Closeout
(Completion) (Submittal)

A. TRAINING

1. Pre-acceptance training; describe or specify lesson plan(s).
2. Post-acceptance training; describe or specify course of lesson plan(s).

TNA 71-058
PSU 71-04
JAH

B. FINAL DESIGN ORGANIZATION

1. Drawings/Procedures

- a. Logics, P&IDs, 499 series elementaries, MDB, Control Room drawings updated; specify drawing number(s).
- b. DCNs - to quality engineer; specify drawing number(s) and/or DCN number with number of sheet(s).

JAH 5/17/91

Submitted

JAH 1/24/92

- c. New Drawings - to supervisor - Staff Services; specify drawing number(s).

Submitted

JAH 1/24/92

- d. Drawings Voided - to supervisor - Staff Services; specify drawing number(s).

JAH

2. Purchase orders - (also contract numbers); specify numbers.

3. Specifications - list to supervisor - Staff Services; specify number(s).

4. Component Instruction Manuals (for issue, revision, deletion) - to supervisor - Staff Services; specify manual/instruction number(s) and vendor(s).

SUBMITTED

JAH 1/24/92

X _____

_____ X _____

_____ X M-217

_____ X M-217
P-103 P-303
P-154 P-359
E-101 #92-0192

_____ X { DB3-H25D
DB3-H25I
JG48A-1001

RENUMBER TO
PBA-4070
SH 1-3
JAH

_____ X SEE ATTACHED LIST

_____ X *JAH*

_____ X COPEL VULCAN
00003
CROSBY
00331
ROSEMOUNT
00325
↓
VIA
D.P.*B

2.27

DOCUMENTATION UPDATE SHEET AND CLOSEOUT CHECKLIST

N/A	Required For Acceptance (Completion)	For Closeout (Submittal)	Sign for Acceptance/ Closeout Requirements
X		—	17. Report major changes to the containment aluminum inventory list with FSAR update.
X		✓	18. Other: <u>CLOSEOUT ECRS</u> <u>NE-91-225, -227, 232, -233, -234,</u> <u>-240, 244, -246, 247, -248, -249, -253</u> <u>-254, -258, -270 PS-91-023</u>

C. CHAMPS DATABASE

IFIT-4049
IFE-4049
IFQ-4049
TR-143

		X	1. Equipment Identification - additions assigned from CHAMPS/Detentions; list description and number(s). <i>Submitted JAM 1/24/92</i>
		X	2. Permanent labeling - labels on new equipment. <i>Submitted JAM 1/24/92</i>
		X	3. Equipment Record - Update to CHAMPS coordinator specify change(s). <i>Submitted JAM 1/24/92</i>
X		—	4. Equipment History - change/update to CHAMPS coordinator. List equipment number(s). <i>Done per D.P. #8 JAM</i>
		X	5. Spare parts stocking and scrapping inputs into CHAMPS. <i>REQUEST SUBMITTED JAM 2/3/92</i>
		X	6. Unused material removed from modification bin.
X		—	7. _____

AF-114
AF-15
AF-4002(-0)3
RO-4003
RF-4035

D. OPERATIONS

✓		X	1. Abnormal operating, normal operating, and refueling procedures - change; specify section(s) affected. <i>N/A</i>
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2.27

DOCUMENTATION UPDATE SHEET AND CLOSEOUT CHECKLIST

N/A	Required For Acceptance (Completion)	Required For Closeout (Submittal)		Sign for Acceptance/ Closeout Requirements
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> <i>JAM</i>	<input type="checkbox"/>	2. Operating Instructions and checklists - change; specify section(s) affected.	_____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>JAM</i>	3. Alarm response and RMS alarm setpoint and response books - change; specify section(s) affected.	_____
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>IT-08 -08A -240 -290A</i>	4. Testing - TS, IT, ORT, other - change; specify test(s) affected.	<i>JAM 10/18/91</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. EOPs, ECAs, CSPs - change; specify section(s) affected.	_____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Periodic callups - change; specify section(s) affected.	_____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. "Programs" - change; specify program and section affected.	_____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. Fire protection procedure - specify section(s) affected.	_____
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. Other _____	_____

MIS.2 : CHANGE SUBMITTED
PER D.P.*B

E. MAINTENANCE

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Maintenance procedures/ instructions - change; specify section(s) affected.	<i>JAM</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> <i>JAM</i>	2. Preventative maintenance - initiate/revise CHAMPS callups.	<i>N/A</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Other _____	_____

2.27

DOCUMENTATION UPDATE SHEET AND CLOSEOUT CHECKLIST

N/A	Required For Acceptance (Completion)	Closeout (Submittal)		Sign for Acceptance/ Closeout Requirements
		X	F. INSTRUMENTATION AND CONTROL	
		X	1. ICPs - change; specify procedure(s) affected.	13.8. INITIATED BY EIC [Signature]
	✓	X ^{14.11} [Signature]	2. Setpoint Document - change; specify section(s) affected.	[Signature]
✓		X [Signature]	3. Preventive maintenance - initiate/revise CHAMPS callups.	
X			4. Other _____	
			G. SECURITY	
X			1. Security Procedures - change; specify section(s) affected.	
X			2. Security Plan - update as required.	
X			3. Other _____	
			H. INSERVICE INSPECTION	
X			1. ISI program updated.	
X			2. Miscellaneous HX ECT/Cleaning program updated.	
X			3. Other _____	

2.27

DOCUMENTATION UPDATE SHEET AND CLOSEOUT CHECKLIST

N/A	Required For Acceptance (Completion)	Closeout (Submittal)	Sign for Acceptance/ Closeout Requirements
			I. TECHNICAL SERVICES
<u>X</u>	---	---	1. Reactor Engineering Instructions - change; specify section(s) affected. _____
<u>X</u>	---	---	2. Reactor Engineering refueling procedures - change; specify section(s) affected. _____
<u>X</u>	---	---	3. Refueling procedures - change; specify section(s) affected. _____
<u>X</u>	---	---	4. Software control - specify system affected and software change request number. _____
<u>X</u>	---	---	5. Other _____ _____
			J. OTHER (CHEM., HP, ETC.)
<u>X</u>	---	---	1. _____ _____
<u>X</u>	---	---	2. _____ _____

DOCUMENTATION TRANSMITTAL

TO: Wisconsin Electric Power Co.
231 West Michigan Street
P. O. Box 2046
Milwaukee, WI
53201

DATE: March 13, 1991CUSTOMER ORDER NO. 183698CROSBY FACTORY ORDER NO. 1690200

Gentlemen:

The following documentation for subject order is herewith forwarded for your retention:

<u>DOCUMENT</u>	<u>VALVE TAG NO.</u>	<u>CUSTOMER ITEM NO.</u>	<u>ITEM NO.</u>
2 Copies Certificate of Conformance Test Reports	AF4035	N/A	001

Joanne Howard

CROSBY QUALITY ASSURANCE

CERTIFICATE OF CONFORMANCE

PRODUCT CERTIFICATION

CROSBY VALVE & GAGE COMPANY

Wrentham, Massachusetts

Customer Order No. 183698

Date: March 13, 1991

Crosby Order No. 1690200

Valve Tag No.: AF4035

Style No. 2 J 3 JLT-JOS 15C

Item No. 001

Assembly No. 68474000

Quantity Shipped 1

Gentlemen:

This is to certify that the above valve(s) were manufactured in accordance with the requirements of the subject purchase order.

Very truly yours,

CROSBY VALVE & GAGE COMPANY

Joanne Howard
Quality Assurance Records Specialist

OTHER APPLICABLE REQUIREMENTS ADHERED TO:

- ASME Power Boiler Code (Section I)
- ASME Unfired Pressure Vessel Code (Section VIII)
- Lloyd's Register of Shipping
- U.S. Navy
- Tested in accordance with A.S.A. Specifications
- Chemical Test Results
- Physical Test Results
- Calibrated (without use of oil) within % accuracy *
- Commercial Materials (to Crosby Standards) used
- All workmanship and equipment in accordance with MIL-G-5923
- Cleaned & degreased for oxy. service
- Other: _____

PART NAME	HEAT NO.

* Accuracy is % of maximum graduation at any point on the scale.

CROSBY VALVE & GAGE COMPANY

Wrentham, Massachusetts 02093

VALVE TEST REPORT

Test Procedure No. _____

Tag No.: AF 4/c 3.5 Component Serial No.: VA1690201 Date: 3-11-91
 Test No.: _____ Factory Order No.: 01690200 Item No.: 001
 Size: 2 J 3 Customer's Order No.: 183698
 Style: JLT-JCS/5 Type: C Spring Set Pressure, psig.: 50
 Shop No.: 6847400 Drawing No.: _____ Spring No.: X06052

1. A. Hydrostatic Test - (3) Min.

Pressure psig.: 100

Tested By:  3-11-91

Accepted By: _____

Accepted By: _____

B. Shell Test - (—) Min.

Pressure psig.: N/A

Tested By: _____

Accepted By: _____

Accepted By: _____

2. Final Set Pressure psig. 50

Water
Air

Pressure psig.: 1. 50
 2. 50
 3. 50

Tested By:  3-11-91

Accepted By: _____

Accepted By: _____

3. Seat Leakage Test - (3) Min.

Pressure psig.: 45 (90% of Set Pressure)

Leakage: Water _____
Air _____
Steam _____

Tested By:  3-11-91

Accepted By: _____

Accepted By: _____

PURCHASE ORDERS

#	DESCRIPTION
185010	Flow orifice plates ; FLANGES (DANIELS)
189340	CS 3 x 2 sock-o-lets
183698	RELIEF VALVE (CRESSY)
183687	Control Valves (PSI)
184161	Flow TRANSMITTERS (ROSEMOUNT) ; MANIFOLDS
184514	Flow RESTRICTING ORIFICES FOR P-3B44B
181528	TRANSMITTER POWER SUPPLIES (ROSEMOUNT)
183706	Flow RESTRICTING ORIFICES FOR 1/2"-P29
195713	MANUAL GLOBE VALVES (CONVAL), 55
187255	HANDBUILT CONVERSION KITS FOR CONTROL VALVES (CVULC)
187317	SWAGelok FININGS
185609	MANUAL GLOBE VALVE, (5, (JRWCO)
160141	ENCLOSURES
184859	PIPE ; FITTINGS
185026	PIPE ; 4x2 SOCKETS (QA)
189332	SPRINGS FOR CONTROL VALVES (CVULC)

CONTACTS

168644	PHILLIPS/GETSCHOW
168789	PIEPER { FJO FF018065 } u2 (FF013513) u1
	u1: FF019449
	u2: FF019449
	COM.M. : AAC018091
	u1: FF019449

F L O - M A X , I N C .
 P . O . B O X 8187
 K I N G W O O D , T X 77325
 (713) 987-2631 (800) 426-9156 FAX (713) 987-2930

FLOCURVE (tm) Program 5200.03
 FLOW VERSUS DIFFERENTIAL PRESSURE

CUSTOMER----- SERVICE METAL PRODUCTS
 CUSTOMER ORDER----- 803080H ADD 1
 SHOP ORDER----- 910808
 DATE----- 04/20/91
 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	130.3833	81.6000	68	61.4992	44.4000	37	18.2077
117.6000	98	127.7332	80.4000	67	59.7027	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	56.1928	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	102.9852	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	98.3868	66.0000	55	40.2328	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	26.9328	16.8000	14	2.6058
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	1.9162
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

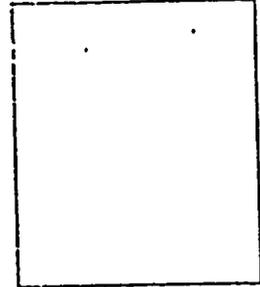
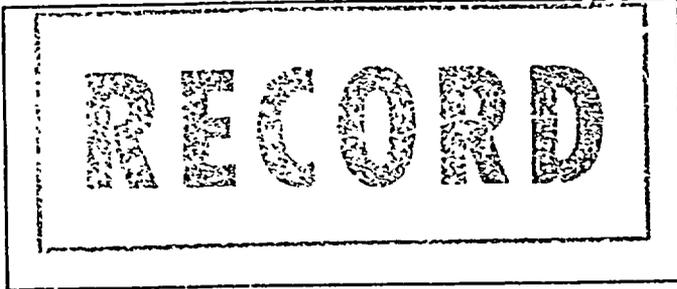
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POINT BEACH NUCLEAR PLANT

PROCEDURE USAGE

Record/Field Copy Identification

Field Copy Number



RED - Record Copy, BLACK - Field Copy

Procedure IWP 88-099*A 1P29 Recirc line upgrade

Revision No. 0

Revision Date 4-8-91

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

By E. Rowland Date 4-17-91

Record Copy Holder/Location ALISE DE DUENKEL

FIELD COPY DISTRIBUTION

Copy No.	Holder/Location	Issue Date	Return Date
1	Phillips Getschow	4-17-91	6-6-91
2	''	4-19-91	destroyed
2	''	4-19-91	destroyed
4	Tim Bauer	5-09-91	5-13-91
5	MITN - Mike Londer	5/10/91	
6			
7			
8			

RED
RED

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.

SUBJECT: MWR Justification for AFW Enhancements

REFERENCE: MWRs 915320, 922033, 922034

After installation of MR 88-099*A, which increased the size of the mini-recirc line for 1P29, a number of open items were identified for future resolution.

- The actuator spring on recirc control valve was oversized. New springs were procured for our system pressures and were installed in the other 3 recirc control valves prior to their installation. MWR 922033 was initiated to install the new spring in 1AF-4002. This change has been addressed and justified in the design packages for the other three recirc lines (MR 88-099*B, *C).
- The relief valve, AF-4035, had an open discharge port and was positioned to discharge toward a stairway. MWR 915320 was initiated as a result of a safety suggestion, and proposed adding a flow director onto the valve. This proposed addition was given to Sargent and Lundy to be included in their analysis of the recirc header. Verbal acceptance was given to proceed as proposed.
- The flow orifice flanges for 1FE-4049 were initially oriented such that the taps came off of the top of the flanges. The desired location for these taps, per I&C, is at the horizontal centerline of the pipe. The remaining three recirc lines installed the flanges in the desired orientation and MWR 922034 was initiated for changing 1FE-4049. Work will be controlled per mechanical contractor's traveler and piping will be hydro'd after installation.
- Due to material availability at the time of original installation, a carbon steel manual isolation valve (AF-15) was installed in a stainless steel line. Stainless valves were installed in the recirc lines for P38A&B, but the use of a carbon steel valve was again necessary during the installation of the 2P29 recirc line. The concern with the use of carbon steel in this system is that cavitation occurs across the restricting orifice which is just upstream of the manual valve. The specific model of valve however, has chrome trim and a stellite seat ring, making them less susceptible to erosion. Additionally, in order to replace the valves the entire recirc header would need to be removed from service, which puts the all of the AFW pumps in non-standard operating modes. Since the AFW pumps are normally not run for extended periods of time and the carbon steel valves should be able to withstand the intended service, it was decided the valve replacement would not be pursued at this time.

MICRO

JUL 29 1992

Shulch

MINOR/SPECIAL PROCESS TEMPORARY CHANGE REVIEW AND APPROVAL

NOTE: REFER TO PROCEDURE PBNP 2.13, TEMPORARY CHANGES TO PROCEDURES, FOR GUIDANCE ON COMPLETING THIS FORM.

PROCEDURE NUMBER/TITLE FWP 88-099 * A

Revision Number/Date 0/4-16-91 Date of Change 5-1-91

UNIT: PB1 PB2 PBO

Temporary change valid until Completion of FWP

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 Destination/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. If screening has not been completed, provide a brief explanation why. No - Tagging change only.
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 2.13 and attached.
4. If notification of others is required because of these changes, then such notification has been initiated. Groups/Individuals notified: _____

Step	Change/Reason
<u>3.1.10</u>	<u>Remove tagging requirement for 7L, circuit 25 to keep power available for power tools.</u>
<u>3.1.11</u>	<u>Page 9 Added tagging requirement prior to tie-in to receptacle for transmitter power.</u>

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

Changes originated by DE Duenkel Date 5-1-91

APPROVAL PRIOR TO USE

DE Duenkel Date 5-1-91 Time 0809
DSS or Cognate Supervisor

SUBSEQUENT REVIEW AND APPROVAL

J. L. G. Tol Date 6-6-91
Cognate Group Head

Permanent procedure change required? Yes No

If yes, revision initiated by: Originator _____ Date _____

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 88-099 *A

Revision Number/Date 0 / 4-16-91 Date of Change 4-26-91

UNIT: PB1 PB2 PB0

Temporary change valid until _____

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)
<input type="checkbox"/> 1. Sign off - not used Non-Sign off - Group Head with procedure
<input type="checkbox"/> 2. Group tracking with procedure copy
<input type="checkbox"/> 3. Sign off - original procedure in use Non-Sign off - procedure copy into manuals
<input type="checkbox"/> 4. Senior Clerk, Records Management w/o procedure

REQUIREMENTS

- The procedure changes listed on this form shall not change the intent of the procedure.
- 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. If screening has not been completed, provide a brief explanation why: No effect on intent of procedure.
- If this procedure change implements a temporary change/modification to the facility, then a temporary modification form, FBF-2013, shall be completed described in PBNP 2.1.3 and attached.
- If notification of others is required because of these changes, then such notification has been initiated. Groups/Individuals notified: _____

Step	Change/Reason
<u>3.1.1</u>	<u>Deleted AF-1 from tagging list because AF-2, 9, 10 and BE-95 are placed in lieu of this.</u>
<u>3.1.4</u>	<u>Added step to replace N-Cardwell relief valve.</u>
<u>3.1.5</u>	<u>Deleted AF-1 and added AF-2, 9, 10 and BE-95</u>

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

Changes originated by D.E. Duembel Date 4-26-91

APPROVAL PRIOR TO USE

D.E. Duembel Date 4-26-91 Time 1420
DSS or Cognizant Supervision

SUBSEQUENT REVIEW AND APPROVAL

John A. Pal Date 6-6-91
Cognizant Group Head

Permanent procedure change required? Yes No

If yes, revision initiated by: Originator _____ Date _____

**POINT BEACH NUCLEAR PLANT
STAFF DOCUMENT REVIEW**

DOCUMENT NAME IWP 88-099#A - 1P29 Recirc Line Upgrade

PROC/DOC. NO. IWP 88-099#A
 REV. NO. 0
 FILE NO. _____
 DATE 4-8-91

MSSM NO. 91-07
 DATE 04-12-91
 BY [Signature]

Approved Manager [Signature]

Date 4/12/91

REVIEW REQUIRED

MSSM	QUORUM	
POSITION	INIT	DATE
Manager		
Gen Supt-OPS		
Reg Eng		
Gen Supt-MTN		4-12-91
Supt-OPS (Documents)	JS JS for JCR	4-12-91
Supt-TRN		
Supt-CHEM		
Supt-HP		
Supt-MTN	[Signature]	4/12/91
Supt-I&C	[Signature]	4-12-91
Supt-TCS		
MOE Engr		
MSE Engr (A)	[Signature]	4-12-91
EIE Engr		
IIE Engr		
AS-RES		

NOTES:

- The provisions of 10 CFR 50.59 apply to all changes and must be evaluated and documented in accordance with QP 3.3, "Authorization of Changes, Tests, and Experiments." Attach QP 3-3.1 if review is required.
- Technical Specification 15.6.8 applies for all procedural changes. A quorum of MSS members (four) must review the proposed change prior to approval by the manager.
- For the purpose of review by an MSS quorum, only two alternate MSS members may be designated. They should be identified by placing an "A" adjacent to their position titles.

COMMENTS	INIT/DATE	RESOLUTION	INIT/DATE
① JCR approved IWP on 4-10-91 but forgot to initial serial review	JS/4-12-91	NA	

RETURN TO DOCUMENT CONTROL UPON COMPLETION

FOR I&C USE ONLY
SHEET NO. _____
COMPLETED _____

**PERMANENT PROCEDURE AND PROCEDURE REVISION
REVIEW & APPROVAL**

PROCEDURE Installation Work Plan 88-099#4 Revision Number 0

DESCRIBE CHANGES

Date 4-8-91

Step	Change/Reason
_____	<u>Original Initial Revision</u>
_____	_____
_____	_____
_____	_____

Use PBF-0026c for additional description of changes

YES NO

IS SCREENING FOR 10 CFR 50.59 APPLICABILITY REQUIRED IN ACCORDANCE WITH OP 3-3. IF YES, ATTACH APPLICABLE PORTIONS OF FORM OP 3-3.1.

CO
W/3/91

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.

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

Julie Pederson Date 4-8-91
Originator

[Signature] Date 4/12/91
Review (Approval) Management person.
from cognizant group

APPROVALS

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

INSTALLATION WORK PLAN

PBNP MINOR PROCEDURE



Check As
Applicable

- 911437 - MACH. CONTRACTOR
- 911438 - HC SOTRONS dPS-6002
- 911439 - HC TRANSMITTER
- 911440 - MRE AF-6002
- 911441 - HC W/LIMIT AF-6012
- 911442 - HC W/LIMIT AF-6019

MAINTENANCE WORK REQUEST WORK PLAN



FOR MODIFICATION # 88-099*A, MWR # _____

INSTALLATION WORK PLAN TITLE

1P29 Aux Feedwater Pump Recirc Line Improvement

UNIT 1

QA-SCOPE

NON QA-SCOPE

Originator Julie Pederson Date 3-21-91

Reviewer [Signature] Date 4/5/91

Design Group Superintendent [Signature] Date 4/10/91

Quality Engineer [Signature] Date 4/10/91

Installation Group Superintendent [Signature] Date 4-12-91

Superintendent Operations [Signature] Date 4/10/91

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.



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

1.0 SCOPE

- 1.1 The purpose of this modification is to increase the flow capacity of the 1P29 Aux Feedwater Pump recirc line and to install flow indication on the recirc line for ASME Section XI testing.
- 1.2 The scope of this work plan is to replace the existing 1 1/2 inch recirc line with a 2 inch line, add a flow orifice and transmitter, replace the existing recirc line relief valve, and change the setpoints for AF-4002, 1P29 Aux Feedwater Pump Recirc Line Control Valve.

NOTE: 2P29 and P38A & B are considered operable with their respective mini-recirc line isolated if the discharge path for each pump is maintained open to at least one steam generator.

***CAUTION*:** IF 2P29, P38A, OR P38B AUTO START OR NEED TO BE RUN, DO NOT OPERATE 2P29, P38A OR B AT A DISCHARGE INDICATED FLOW OF <50 GPM WHEN THE MINI-RECIRC LINE IS ISOLATED.

- 1.3 The approach of this installation will be to isolate the recirc line for all four Aux Feedwater Pumps while Unit 1 is in a refueling outage, cut and cap the existing recirc line on the 1P29 pump, install the new relief valve, and the new recirc line for 1P29 installed up to the manual valve AF-15. A hydrostatic test will be completed and the recirc line return header returned to service. The tie-in at the pump discharge end of the line will then be done with just 1P29 out of service due to the refueling outage on Unit 1. The hydrostatic test of the high pressure portion of the lines, the electrical tie-ins, and setpoint changes will be made prior to Unit 1 reaching criticality.

- 1.4 This is QA scope work. QA Scope Clarifications:

The control valve, AF-4002, and the piping and check valve upstream of AF-4002 are QA scope. The piping, fittings, valves, etc. downstream of AF-4002 are non-QA scope.



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

2.0 PRE-INSTALLATION REQUIREMENTS

2.1 References:

- Working drawing(s): SK-AFW-001/88-099
SK-AFW-002/88-099
SK-AFW-003/88-099
SK-AFW-004/88-099
PBA-4070, Sheet 1
PBA-4070, Sheet 2
PBA-4070, Sheet 3

- Setpoint change for dPIS-4002.
- Spec sheet for flow orifice for transmitter calibration.

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

RE/LE
RE/LE

- MI 32.4 Guidelines for exclusion of foreign material from plant systems
- The installation will be in accordance with B31.1-1967.
- Welding Procedures: Phillips-Getschow WPS 1, WPS 8, WPS 8-1, and AWS D1.1.
- MI 26.1.1 General Instructions for crimp style cable terminations, splices, and connections
- PB-196 Specification for Non-Safety Related Electrical Installation
- MI 32.8 Guidelines for Opening Piping Systems
- MI 32.9 Erection of Tube & Clamp Sectional Scaffolding

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

- MR 88-099 Design Package A
- Calculations N-91-007, N-91-031, and N-91-032.

2.3 Installation Preparation Activities

- Bill of Material is attached to this IWP.

Responsible engineer has assured that all materials on the BOM are on site, available for the modification, and QA released.

RE/LE
RE/LE



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

If there are any discrepancies list here with resolutions:

- CHAMPS Nos. and/or labels are required and have been requested and/or obtained.

RE/LE

2.4 Prefabrication Work

- Prefabricate section of piping from the straight section of 2 inch piping upstream of the manual valve AF-15 to right before the half coupling which ties the line in with the 3 inch header.
- Prefabricate new flange and relief valve assembly. Initially a blank flange instead of the relief valve shall be installed.
- Visually inspect all welds at completion of prefabrication.

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

RE/LE DE Duenkel Date 4-27-91

2.5 Identification of Permits Required

- The MWR(s) for the IWP have been written and submitted to CHAMPS (see cover sheet).
- Ignition Control Permit is required.
- Tag outs and hydro testing are done in two phases and will be completed as part of the installation.

2.6 Personnel Safety Concerns

- There are no drains in the recirc line, so the line will be filled with water. Be prepared to drain the existing 1P29 recirc line when the first cut is made.

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.

Installation Supervisor DE Duenkel Date 4-27-91



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

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

R.E./L.E. Julia Pederson Date 4-22-91

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

Installation Supervisor DE Duenkel Date 4-27-91

3.0 Installation

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, the liaison engineer, or the installation supervisor.

NOTE: Reference SK-AFW-001/88-099 and the associated Bill of Materials for the following steps.

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./L.E. DE Duenkel Date 4-27-91

NOTE: Do not isolate the system until requested by the RE/LE and all of Phase I work is ready to proceed.

NOTE: 2P29 and P38A & B are considered operable with their respective mini-recirc line isolated if the discharge path for each pump is maintained open to at least one steam generator.

***CAUTION*:** IF 2P29, P38A, OR P38B AUTO START OR NEED TO BE RUN, DO NOT OPERATE 2P29, P38A OR B AT A DISCHARGE INDICATED FLOW OF < 50 GPM WHEN THE MINI-RECIRC LINE IS ISOLATED.

- Post temporary information tags as directed by temporary information sheets 91-13 and 91-14.

KS
5/1/91

15

TPS
DSS

TPS
OPS



1P29 AUX FEEDWATER PUMP RECIRC. LINE
IMPROVEMENT
UNIT 1

INITIALS

- for 4-26-91*
- AF-4012 and AF-4019 ~~low limits on the controllers~~ are adjusted to maintain a minimum position of 10% open.

AF-4012 adjusted I&C B. BANDERSON
AF-4019 adjusted I&C B. BANDERSON

- Stroke AF-4012 and AF-4019 to verify operation.
- Tag out the system per the following list.

TPS.
OPS

<u>Component ID</u>	<u>Description</u>	<u>Position</u>
1AF-18	1P29 discharge to 1HX-1A	Shut
1AF-19	1P29 discharge to 1HX-1B	Shut
AF-26	1P29 suction from CST	Shut
1AF-4006	1P29 SW suction MOV control switch	Closed
1AF-4006	1P29 SW suction MOV handwheel	Shut
1B52-428F	1AF-4006 Bkr on 1B42	Open
D1216	1AF-4002S power and 4002 VPI	Open
IA-352	1AF-4002 IA supply	Shut
AF-21	1P29 discharge casing drain	Open
AF-21A	1P29 discharge high point vent	Open
AF-21B	1P29 discharge high point vent	Open
AF-95A	1P29 discharge header drain	Open
AF-95B	1P29 discharge header drain	Open
AF-27	P38A mini-recirc manual Isol.	Shut
AF-40	P39B mini-recirc manual Isol.	Shut
AF-53	2P29 mini-recirc manual Isol.	Shut



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

Component ID	Description	Position
AF-2	T-24A CST Mini-Recirc Isol	Shut
AF-1	Combined AF pump-recirc Isol	Shut
AF-9	T-24B Recirc Isolation	Shut
1MS-128	1P29 steam supply isolation	Shut
AF-10	T-24 A/B CST Heating	shut
GE-86	Return Header Isol	shut
Tag Series 118-727	T-24A/B CST Feed	shut

DEJ
4-26-91

JP
4-24-91

IPS.
OPS

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

DSS Thom C. Shuf Date 4-29-91

3.1.2 Phase 1: Installation

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

NOTE: The work on the new relief valve, the existing relief valve, and installing the recirc line up to AF-15 are to be done in parallel.

- Drain the system by cutting or drilling the 1P29 mini-recirc line downstream of the existing AF-15 and /or by removing the relief valve AF-4035 (which is on the P38-A mini-recirc line). Control drainage as well as possible by using hoses, catch basins, etc. Coordinate with OPS as necessary.
- Remove the cover from ~~AF-117~~ AF-117 and set up an Argon Purge for during welding.
- Disconnect the solenoid valve and limit switches from the existing AF-4002.
- Cut the existing 1-1/2" recirc line close to the 3" common recirc header and siphon the water from this header as necessary to provide a suitable welding environment.
- Remove the section of the existing recirc line from the 3" common recirc header to the first elbow downstream of AF-15.

JP 4-24-91
DEJ
P/G
DEJ
P/G
Maint.

DEJ
P/G

DEJ
P/G



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

- Install the prefabricated section of piping which includes the new AF-15 by making a new penetration into the 3" common recirc header and welding in the half coupling (see SK-AFW-002). Visually inspect all new welds at completion. Visually inspect all butt welds at fit-up, root pass, and at completion.

DED
P/G

- Rig temporary support for the new recirc line. The temporary support should be rated for 200 lb.

DED
P/G

- Remove relief valve AF-4035 off of nipple, if not done previously. Cut nipple off of outlet side of coupling and install a new longer nipple with the outlet end threaded. Visually inspect butt welds at fit-up, root pass, and at completion. Visually inspect all welds at completion.

DED
P/G

- Install a 3/4" hydro test connection with gate valve in the relief valve's previous location.

DED
P/G

- Install a half coupling on 3" header for the new AF-4035 relief valve complete with welded inlet stub and mounting flange. (See SK-AFW-001 and -002). Do not install the relief valve. Temporarily install a blank flange for hydro testing. Visually inspect butt welds at fit-up, root pass, and at completion. Visually inspect all welds at completion.

DED
P/G

- Red Tag the new AF-15 shut.

- Replace cover on AF-119 and bolt after removing carbon purge. Verify that new welds on the newly installed portion of the mini-recirc were visually inspected.

JP 4-24-91
OPS
DED
P/G
DED
P/G

MWR 9/19/93
3.1.3

3.1.4

Align the system as necessary and hydro the mini-recirc header per PBMP 3.2.5. See hydro sheets attached.

3.1.4 r
3.1.5

INSTALL New Relief Valve

After a satisfactory hydro, clear Red Tags for AF-1, 27, 40, and 53, and lock these valves open.

OPS
OPS
P/G
OPS
OPS

DED
4-26-91

Caution: Perform step 3.1.6
Prior to step 3.1.5

AF-2, 9, 10,
and BE-95v

DED
4-26-91



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

3.1.6 Remove 3/4" hydro test connection and gate valve and install cap at old relief valve location.

P/G

3.1.7 Return the low limits on the controllers for AF-4012 and AF-4019 to their original settings of 0-100%.

AF-4012 returned I&C B. Randerson
AF-4019 returned I&C B. Randerson

3.1.8 Stroke AF-4012 and AF-4019 to verify operation.

OPS

3.1.9 Remove the temporary information tags that were installed per sheet 91-13 and 91-14.

OPS

10
5/1/91

NOTE: The 2P29, P38A and B auxiliary feed pumps should be considered in-service at this time with no restrictions on discharge flow.

DSS

3.1.10 Phase 2: Equipment Isolation and Tag Out

This phase of the installation requires one additional tag out. Other Tag outs from Phase 1 are still required.

Lighting Panel 7L, Circuit 25, AFW area Receptacles.

Position: OPEN

OPS

To be done later -
so that power is available
for PG power tools for
pipe fitting work.
DED
5-1-91

3.1.11 Phase 2: Installation

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

R.E./L.E. DED

Date 5-1-91

DSS OPS

Date 5-1-91

- Remove the remainder of the old mini-recirc line up to and including the connection to the 4" discharge header.

P/G



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

DEB 5-1-91
NOTE: *Per form PT exam of 2" x 4" socket (open butt end) at connector weld to 4" header, root pass and final pass.*
- Install the new recirc line from the branch connection on the discharge header up to the new AF-15 (previously installed in Phase I). See SK-AFW-001 for details. Perform visual exams on each butt weld at fit-up, root pass, and at completion. Visually inspect all welds at completion. *The flow orifice must be oriented so that the test connections are located at the center line or higher.*

DEB
P/G

- Fabricate and install the new piping supports, DB-3-H251 and DB-3-H252. Move and modify support DB-3-H250. See SK-AFW-001/88-099 for location and PBA-4070, Sh. 1, 2, 3 for individual support details. Perform visual exams on all new support welds at completion.

DEB
P/G

- Install support for flow transmitter. See SK-AFW-003 for details.

DEB
P/G

- Change setpoints on 1dPIS-4002 from 30 and 75 gpm to 110 and 145 gpm.

INB
I&C

- Install transmitter on its support and install 3/8 inch SS tubing from the transmitter to the orifice plate, per Rosemount Tech Manual, Control #00325. Test-tees and isolation valves are to be installed as necessary.

INB
I&C
DEB

DEB 5-1-91
JP 5-9-91
- IAF-4002 solenoid & VPI BKR is on D12 needed to be cleared on 5-3-91 for some ORET's preliminary testing. Ensure tag is removed on open BKR prior to limit switch and solenoid valve wiring work.
- Install existing limit switches and solenoid valve on the new control valve, AF-4002 and make electrical connections. *JP 5-9-91*
- Tag Breaker (7L, Circuit 25) open which supplies AFW area receptacles
- Mount electrical enclosure for transmitter power supply and mount power supply in the enclosure. See SK-AFW-004 for approximate locations.

JP
Maint
EB
OPD
JP
Maint

- Run conduit and cable from the receptacle to the power supply. Make final terminations. See SK-AFW-004 for layout, and see Cable and Raceway Schedules for cable, conduit, and termination details.

JP
Maint

- Install new junction box and conduit for limit switches and solenoid valve for AF-4002. ~~Put cable through new conduit to the new AF-4002.~~
Proceed to page 9a for installation of cable.

JP for
Prepar

WSP 5-10-91

JP 5/10/91

NOTE: THE NEXT THREE STEPS MAY BE PERFORMED IN ANY ORDER

- Lift leads of field cable ZA1NC005-B from terminals TSAJ-4, TSAJ-5, TSAJ-6, TSAJ-7 and TSAJ-8 on riser 11 in 1C03. Use attached form EQR-36 to record connections.

3P
MAINT.

- Disconnect cable ZA1NC005-B from existing solenoid valve and limit switches for 1AF-4002. Do not disturb conductor labels or ensure conductors are relabeled in the as-found condition. Note connections for limit switches below:

Untagged A and P on Common, 5 on NO
~~tagged A on Common 4 on NO~~
A jumper is between switches

Green and orange to Sol. valve (1AF-4002-5) TTP for PIEPER

- Label the two junction boxes connected to raceway 4002-1 in accordance with the raceway schedule for Task 293.

TTP for
PIEPER

- Pull back cable ZA1NC005-B to 1JB766. Pull cable ZA1NC005-B to 1JB767. Ensure MTN has lifted cables leads from TSAJ in 1C03. Perform continuity and insulation checks of the cable.

TTP for
PIEPER

- Make two knock-outs for 1" sealtite conduit and one knock-out for 1/2" sealtite conduit in 1JB767. New flexible conduit is to be installed by MTN.

TTP for
PIEPER

- Re-connect cable ZA1C005-B to TSAJ on riser 11 in 1C03. Reference step above and DWG. E-95 sheet 10 for connections.

3P
MAINT.

- Remove unused sealtite from old junction box and seal the holes in the box as convenient for the installer as other work is being completed.

3P
MAINT.



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

- Install cable between the power supply and transmitter. Make final terminations. See Sk-AFW-004 for layout, and see Cable and Raceway Schedules for cable, conduit, and termination details.

JS
I&C

- Calibrate new transmitter, 1FIT-4049, per attached cal. sheet.

SDP
I&C

3.1.12 Phase 3: High Pressure Hydro Test

The pre-installation requirements for Phase 3 have been met and it is acceptable to proceed with the installation.

R.E./L.E. Adhikar Date 5/16/91

DSS Spencer Date 5-16-91

NOTE: Phase 3 work must be completed prior to U1 criticality.

- Clear the remainder of the tag series for fill and vent of 1P29.
- Align system as necessary and hydro the DB-3 portion of 1P29 recirc line up to AF-15 per PBNP 3.2.5. See attached Hydro Data Sheet. Done 5/14/91

[Signature]
OPS

[Signature]
OPS

3.2 As-Built Description

- This IWP was installed by:

P/G Piping

Preper & Electrical Maint Work Limit switches & Solenoid valve
I&C Flow transmitter wiring

- Describe the "as-built" configuration, listing any ECR's, NCR's, or other considerations that effect the "as-built" condition of the modification.

ECR's: NE-91-240, 246, 247, 248, 249, 244, 253, 254, 258, 270, 225, 277, 232,
PB-91-023 233, 234

Attach any additional documentation of the "as-built" description to this IWP.

- QAR Numbers will be recorded in the MWR.



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

3.3 Installation Complete

Installation Supervisor/MSE JM for DED Date 5/16/91
 Installation Superintendent/MSE J. La. Bl Date 5-17-91
 Installation Supervisor/I&C SB me Date 5/16/91
 Installation Supervisor/Maint DE Duenkel Date 5-17-91
 R.E./L.E. J. Smith Date 5/16/91

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

QC Inspector DE Duenkel Date 5-17-91

4.0 TESTING

4.1 Testing Intention

- Hydrostatic test and visual inspection of welds per B31.1 is required to verify pressure retaining capability of new piping, valves, and fittings.
- Operational test of the flow transmitter verifies design flow capacity of the new recirc line.
- An initial visual exam for any leakage will be done with the piping under system pressure.
- The three welds between the check valve AF-114 and branch connection to the 4" discharge header will be dye penetrant (PT) tested ~~due to being inaccessible for hydro testing~~ and hydro tested during the operational leak test during IT-08. JP 5-2-91



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

4.2 Testing Description

- Hydrostatic testing was completed as part of the installation procedures.
- NDE is required. All new welds were visually inspected in the installation section. The three welds between AF-114 and the 4" branch connection require a surface examination.
- With the new recirc line filled and vented do an initial visual leak test during IT-08. Record results here:

THE THREE WELDS IN QUESTION DID NOT LEAK.

- Complete IT-08 and take a flow reading from 1FI-4049 while AF-4002 is open. 122-126 gpm
- During IT-08 ~~hydro~~ test the three welds at the 4" AFW discharge branch connection.

4.3 Testing Acceptance Criteria

- All NDE and hydro tests must be acceptable per B31.1-1967.
- Flow reading on 1FI-4049 should be between 100 and 116 gpm.

OPS
5-2-91

4.4 Testing Results

Describe the results of the testing below:

THE TOP VALVE ON THE TRANSMITTER MANIFOLD LEAKED DURING THE LEAK TEST. I&C REMOVED VALVE AND REPAIRED IT. RETESTED IT AND THERE WERE NO LEAKS.

Attach any additional testing documentation to this IWP.

4.5 Testing Complete

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

Testing Supervisor B.D. Striansky

Date 5-17-91

Supt. Testing Group AM

Date 5/17/91



1P29 AUX FEEDWATER PUMP RECIRC LINE
IMPROVEMENT
UNIT 1

INITIALS

5.0 RESTORATION

5.1 Pre-Acceptance

- Control Room drawings and documents have been updated.
- Acceptance training is completed.

JM
RE/LE
JM
RE/LE

TNA 91-058
SCHEDULED FOR PSD CYCLE 91-04

- All items that need to be completed prior to acceptance have been completed.

R.E./L.E. [Signature] Date 5/17/91

5.2 System Restoration

- Close out all permits.

DSS [Signature] Date 5-17-91

6.0 ACCEPTANCE

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

Superintendent of Acceptance Group: [Signature] Date 5/12/91

Return completed IWP and Modification to the Responsible Engineer, Julie Pederson.

PARTS LIST / BILL OF MATERIALS FOR

MOD REQUEST 88-099-A / DRAWING / SKETCH NO. _____

ITEM NO.	QUANTITY REQUIRED	MATERIAL DESCRIPTION/ SERVICE RATING	VENDOR/ CATALOG NO.	LOT NO. / MOD BIN / P.O. NO.
1	1 ea.	2 in. globe Valve, 1500# ^F , A105	Fig# 215S-FS-2	P.O. No. 185009 in WH-3 Mod Bin
		Relief Valve, 2x3, 150# ^F , 200 GPM	Style JKT-JOS-15-213-C	P.O. No. 183698
		Flow Orifice Flanges, 304 SS		P.O. No. 185010
		Flow Orifice Plate, 316 SS		P.O. No. 185010
		2", 1500# Stainless Steel Control Valve	Fig# 21EA 88RG	in WH-3 P.O. No. 183682
		Flow Restricting Orifice, 304 SS	P/N 125885-CH	P.O.# 183706
		Flow Transmitter with integral display	Model No 1151DP-5-S-22	Bin No T2E1 B1-M4 P.O. No. 184161
		Electrical Enclosure 16x16x4"	No. 1414 PHE	Bin No T3E1 P.O. No. 160141
		Transmitter Power Supply	Part No. 401	Bin No. 3FS6C2 P.O. No. 181528
		Pipe, 2" Sch 40, Seamless Type 304L <small>ASTM A312</small>		W2 Pcd P.O. No. 184859
11	15 ft	Pipe, 2" Sch 80, Seamless Type 304L <small>ASTM A312</small>		W2 Pcd P.O. No. 184859
12	1 ea.	90° Elbow, Sch 40, SW, A312 Type 304		in WH-3 Mod Bin P.O. No. 184860
13	2 ea.	45° Elbow, Sch 40, SW, A312 Type 304		in WH-3 Mod Bin P.O. No. 184860
14	1 ea.	Flange, 3", 150# Slip-On, RF, Type 304		in WH-3 Mod Bin
	1 ea.	Socket, 2"x3", ASTM A105		P.O. No. 184860
15	1 ea.	Cap, 1.5", Sch. 40, SW, Type 304 <small>Type 316</small>		in WH-3 Mod Bin P.O. No. 184860
16	1 ea.	2", 1500# Piston Type Check Valve	Fig No. 3674 F311J	in WH-3 Mod Bin

POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

*Unit <u>7B1</u> *Piping class <u>DB-3</u> *System / Component: <u>AF/1P29 MINI-RECIRC</u> *Design Press <u>1440</u> *Design Temp <u>100</u> Test Press TARGET TEST PRESS <u>2160</u> TEST TEMP <u>448</u> *MWR/SMP/AWP <u>IWP 88-099 *A</u> *Other Reference _____	*Test Type: Hydro <u>X</u> Pneum _____ Other (Specify) _____ *Reference Code: ASME III _____ B31.1.0 <u>X</u> NFPA _____
Components/equipment within test boundary have been reviewed for pressure/temperature limits <u>ASH</u> (Initials)	
*Test Variance or Special Analysis/Consideration Required YES / NO _____ Description _____ Resolution/Comments: _____ ISI Engineer _____ Date _____	

*Pretest Director AShielth Date 5/10/91

INSTRUMENTATION

Temperature Device ID: _____	Test Press Gage ID. <u>OTG #12</u>
Test Press Gage Range: <u>0-6000 psi</u>	(Range shall be 1.5-4.0 times test press)

*Ops Coordinator Review J. Kamysz Date 5-13-91

PRETEST CALIBRATION

POST-TEST CALIBRATION

Cal Equip ID	Ideal	As Left	Cal Equip ID	As Found
<u>T.I-131</u>	<u>2000</u>	<u>2000</u>	<u>1-131</u>	<u>2100</u>
I&C Technician <u>B. Anderson</u>	<u>2100</u>	<u>2100</u>	I&C Technician <u>D. Walker</u>	<u>2200</u>
Date: <u>5-13-91</u>	<u>2200</u>	<u>2200</u>	Date: <u>5-13-91</u>	<u>2200</u>

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

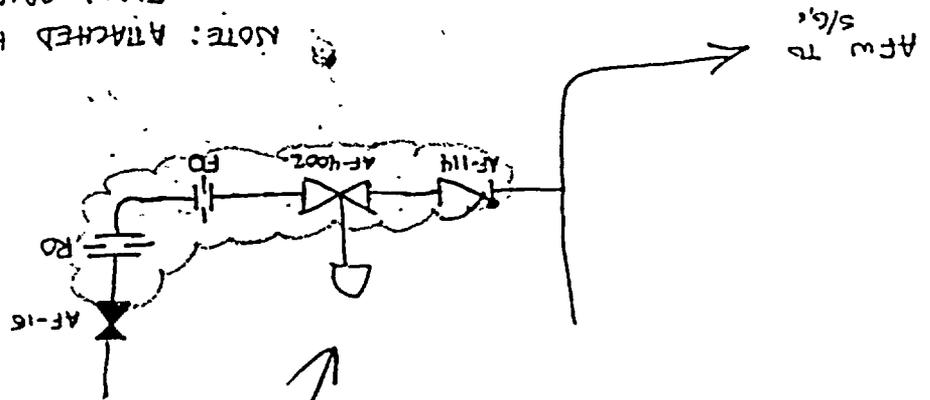
Target Test Pressure <u>2160</u>	Tolerance + <u>90</u> - <u>100</u>
*System Temperature <u>448</u>	*At Test Pressure <u>2160</u> Time _____
*Test Pressure <u>2160</u> 1	Hold Time Complete <u>2:15</u> Time _____
Maximum Pressure <u>2175</u> 1	*Test Complete <u>2:05</u> Time _____
Minimum Pressure <u>2125</u> 1	Test Operator <u>ASH</u> Date <u>5-13-91</u>

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

Test Director Robert J. ... Date 5-13-91
 Ops Coordinator Review J. Kamysz Date 5-14-91
 QAC Review B. Anderson Date 6/7/91
 Comments _____

* Indicate data entry for initial service leak test

NOTE: ATTACHED HYDRO RIG TO
FLOW ORIFICE TAPS.



Water is fail
Air will need
to water open for hydrate
Shift. be applied

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	<u>1440</u> psig
B. *Design Temperature = Td	<u>100</u> deg F
Z = multiplier determined from Table 2 of PBNP 3.2.5	Z = 240 <u>1.5</u>
C. *Test Pressure = Z x A	<u>2160</u> psig
D. *Test Gage Range = 1.5 x C	<u>3240</u> psig
= 4.0 x C	8640 8760 psig
E. *Temporary Relief Valve Setpoint = 1.10 x C	2376 2376 ¹⁵⁸⁴ psig
F. Lowest System Elevation	<u>210'</u> ft
G. Highest System Elevation	<u>215</u> ft
H. Test Gage Elevation	<u>10'</u> ft
I. Elevation Correction = 0.43 x (G - H)	<u>2.15</u> psig
J. Adjusted Test Pressure = C + I	<u>2162</u> psig
K. Additional Low Point Pressure = 0.43 x (H - F)	<u>0</u> psig
L. Low Point Pressure = J + K (for gage above low point) If K is less than zero, enter zero for L.	<u>2162</u> psig
M. Maximum Low Point Pressure = 1.06 x C	<u>2280</u> psig
If L > M, notify the ISI Engineer	
N. System Insulated (Circle one)	YES / <u>NO</u>
O. *Pressure Hold Time (See Table 2 for hold times)	<u>10</u> min/hr
P. *Rounded Adjusted Test Pressure, Step 8.1.8 (Enter on EQR-42 as Target Test Pressure)	<u>2160</u> psig

Comments / Notes: _____

Performed by: Whitlock Date 5/10/91
 Reviewed by: Mark J. Piff Date 5/15/91

* = applicable to pneumatic tests.

POINT BLANK NUCLEAR PLANT
PRESSURE TEST DATA SHEET

PRETEST DATA

Unit T-1 *Piping class 20-4
 System / Component AE-10 NO. 12
 *Design Press 1500 *Design Temp 160
 Test Press 75
 TARGET TEST PRESS 600 TEST TEMP 160
 *AWRSM/AVR/P 100 100
 *Other Reference _____

Test Type Hydro X
 Other (Specify) _____
 *Reference Code: ASME III X
 H31.10 X
 NITA _____

Component/equipment within test boundary have been reviewed for pressure/temperature limits 20-4 (Unit, if)

*Test Variance or Special Analysis/Consideration Required YES/NO

Description: _____

Resolution/Comments: _____

ISI Inject _____ Date _____

*Project Director J. E. R. Smith Date 4-29-91

INSTRUMENTATION

Temperature Device ID _____ Test Press Gage ID 2076 #5
 Test Press Gage Range 0-2000 (Range shall be 1.5:1 max test press)

*Ops Coordinator Review H. K. Kung Date 4-29-91

PRETEST CALIBRATION

Cal Equip ID	Label	ASME	Cal Equip ID	Date	ASME
<u>1000</u>	<u>71</u>	<u>75</u>	<u>11-9</u>	<u>4-29-91</u>	<u>35</u>
IAC Technician			IAC Technician		
Date			Date		

POST-TEST CALIBRATION

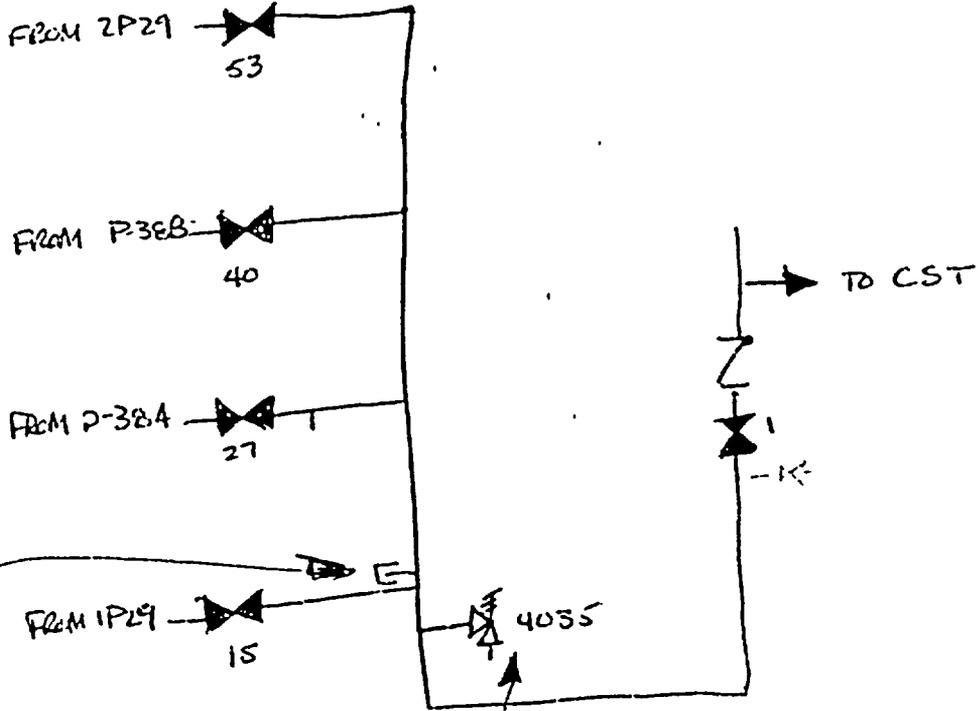
Target Test Pressure _____
 System Temperature _____
 *Test Pressure _____
 Maximum Pressure _____
 Minimum Pressure _____

Reference _____
 *At Test Pressure _____
 Hold Time Complete _____
 *Test Complete _____
 Test Operator _____

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

Test Director [Signature] Date 4-30-91
 Ops Coordinator Review [Signature] Date 5-1-91
 QC Review [Signature] Date 5-1-91
 Comments [Handwritten notes]

AFN
RECIRC
HEADER



Screwed cap on
old 4035 location
for hydro pump
connection in
aux feed pump room

~~GAS RELIEF SHUT~~
~~OR SET TO TEMPORARY~~
~~SETPOINT.~~

Blind flange,
relief valve removed.
JSP

POINT BEACH NUCLEAR PLANT

HYDROSTATIC/PNEUMATIC TEST CALCULATION SHEET

Piping Class/System/Component JG-4 / AFW Recirc / IP29

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

Comments / Notes: _____

Performed by: D E Daenke Date 4-29-91
 Reviewed by: J J Kowalski Date 4-29-91

* = applicable to pneumatic tests.

**POINT BEACH NUCLEAR PLANT
PRESSURE TEST DATA SHEET**

PRETEST DATA

*Unit <u>PB1</u> *Piping class <u>DB-4</u> *System / Component <u>AF / IP29 MINI REGR. PIPING</u> *Design Press <u>1440</u> *Design Temp <u>100</u> Test Press _____ TARGET TEST PRESS _____ TEST TEMP <u>AMB</u> *MWR/SMP/WP <u>INP 88-099*A</u> *Other Reference _____	*Test Type: Hydro _____ Pncum _____ Other (Specify) <u>X INITIAL SERVICE LEAK TEST</u>
*Reference Code: ASME III _____ B31.1.0 <u>X</u> _____ NFPA _____	
Components/equipment within test boundary have been reviewed for pressure/temperature limits <u>JAN</u> (Initials)	
*Test Variance or Special Analysis/Consideration Required: <u>(YES)</u> NO	
Description: <u>IMPRACTICAL TO HYDRO PUMP (SEE REVERSE SIDE).</u>	
Resolution/Comments: <u>PERFORM SURFACE EXAM ON ALL NEW WELDS AND AN INITIAL SERVICE LEAK TEST.</u>	
ISI Engineer <u>Jub Valente for GRS</u> Date <u>5/11/91</u>	*Pretest Director <u>J. Whilk</u> Date <u>5/11/91</u>

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 <u>J. Kamyszek</u>	Date <u>5-16-91</u>

PRETEST CALIBRATION

POST-TEST CALIBRATION

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

TEST DATA (Test Gage Pressure/Backup Gage Pressure)

*Target Test Pressure _____ *System Temperature <u>AMBIENT</u> *Test Pressure <u>1250</u> / _____ Maximum Pressure _____ Minimum Pressure _____	Tolerance + _____ psig - _____ psig *At Test Pressure <u>1330</u> _____ Time Hold Time Complete _____ Time *Test Complete <u>1340</u> _____ Time Test Operator _____ Date _____
---	---

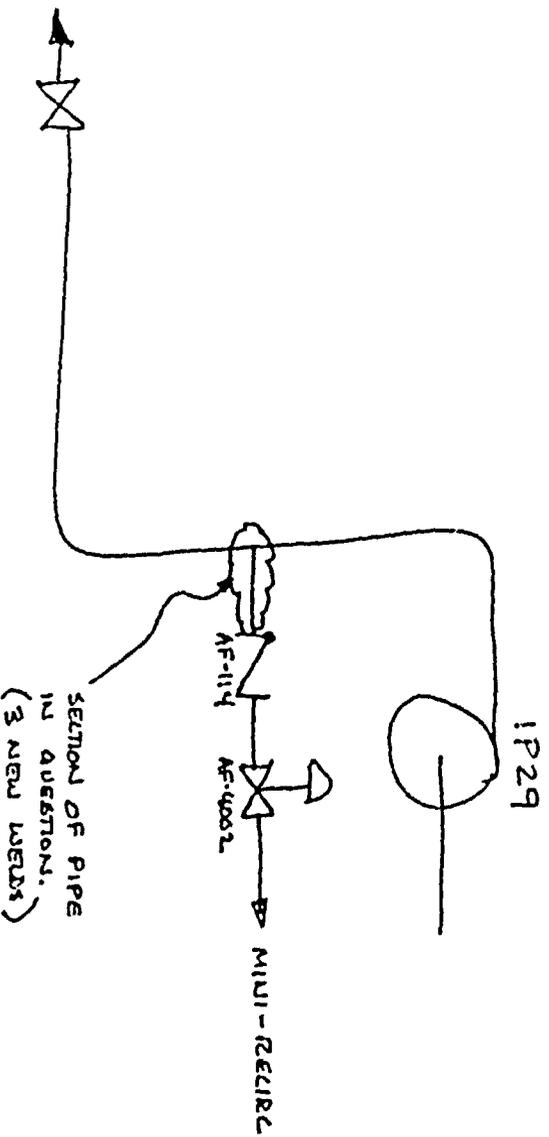
CAUTION: Independent Verification of Restoration per PBNP 3.1.1 may be needed.

Test Director <u>J. Valente</u>	Date <u>5-17-91</u>
Ops Coordinator Review <u>J. Kamyszek</u>	Date <u>5-17-91</u>
OAC Review <u>Submitt</u>	Date <u>6/7/91</u>
Comments _____	_____

* - Indicates data entry for initial service leak test.

TEST VARIABLE DESCRIPTION (CONT.): THE HYDRO WAS NOT REJECTED BECAUSE THE NEAREST FLANGE IS ON THE SUCTION SIDE OF THE PUMP (WHICH HAS A MUCH LOWER DESIGN PRESS.) AND ITS ABILITY TO WITHSTAND NORMAL HYDRO PRESSURES WAS QUESTIONABLE.

SECT. XI (ASME B31.1 CODE) WAS ALSO REFERENCED FOR GUIDANCE ON PRESSURE TESTING OF SIMILAR 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 OF 5150 PSIG. IN ACTUALITY THEN, THE INSERVICE TEST WILL PRODUCE PRESSURES ~10 TIMES THE SECT. XI HYDRO PRESSURE.



PAD
MEB

Julie A. Pederson, P377

As you know, QP 3-1 step 2.2.20 requires that all modification requests be closed out (signed off by the Supervisor - Staff Services) within 90 days of the date that the modification request is accepted... unless a waiver is obtained (per step 2.27.2) from the Modification Engineer.

The below-listed modification request is accepted, and documentation closeout will be due on the date shown. If you will be able to meet this date, consider this as a reminder. If you cannot meet this date, please provide written justification below, have your group head sign this form (to indicate that he is aware of the situation, and is in agreement with your justification), and forward this form to the Modification Engineer.

Modification Request Number: 88-099*A

Description: INCREASE AFW MINI-RECIRC. FLOW - 1P29

Modification Request's Acceptance Date: May 20, 1991

Modification Request's Documentation Closeout Date: August 18, 1991

Justification for not meeting the QP 3-1 step 2.2.20 Modification Request closeout date for MR 88-099*A:

According to the work schedule given to me by my supervisor, John McManama, I would estimate a closeout date of March 30, 1992.

This schedule is necessary in order to meet NRC commitments for the ST/RHE/CS test lines and the remaining AFW service lines this year.

HOWEVER DGN'S & CHAMPS UPDATE WILL BE DONE ASAP. AS SOON as the work schedule on other projects allows this I would estimate a date of 1-31-92 for DGN's and Champs Update.
Proposed Documentation Closeout Date for MR 88-099*A: March 30, 1991

Julie Pederson
Signed

7-2-91
Date

[Signature]
Signed

7/3/91
Date

Modification Engineer's waiver of the QP 3-1 step 2.2.20 Modification Request closeout date for MR 88-099*A is (is not) granted:

✓
Agree

Disagree

[Signature]
Modification Engineer

3/5/91
Date

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AUG 05 1991

Staff Services: Please file this document with MR 88-099*A

POINT BEACH

WBS

MJS / KAM - 1101

~~Tom D. Mielke, PBNP~~

As you know, QP 3-1 step 2.2.20 requires that all modification requests be closed out (signed off by the Supervisor - Staff Services) within 90 days of the date that the modification request is accepted... unless a waiver is obtained (per step 2.27.2) from the Modification Engineer.

The below-listed modification request is accepted, and documentation closeout will be due on the date shown. If you will be able to meet this date, consider this as a reminder. If you cannot meet this date, please provide written justification below, have your group head sign this form (to indicate that he is aware of the situation, and is in agreement with your justification), and forward this form to the Modification Engineer.

Modification Request Number: 88-099*A
Description: INCREASE AFW MINI-RECIRC. FLOW - 1P29
Modification Request's Acceptance Date: May 20, 1991

Modification Request's Documentation Closeout Date: August 18, 1991

Justification for not meeting the QP 3-1 step 2.2.20 Modification Request closeout date for MR 88-099*A:

J. PEDERSON HAD MOD PACKAGE UNTIL JUST RECENTLY. TIME CONSTRAINTS DURING UZ OUTAGE HAVE NOT ALLOWED ME TO PURSUE CLOSEOUT. CLOSEOUT WILL BE PURSUED IN PARALLEL W/ 2P29 PACKAGE.

Proposed Documentation Closeout Date for MR 88-099*A: Nov. 30, 1991

[Signature] 10/10/91 WBS/From 10/12/91
Signed Date Signed Date

Modification Engineer's waiver of the QP 3-1 step 2.2.20 Modification Request closeout date for MR 88-099*A is (is not) granted:

✓ WBS/From 10/12/91
Agree Disagree Modification Engineer Date

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DOCUMENT RETENTION
LIFETIME _____ YRS
NON-PERMANENT _____ YRS
FILE NO. M1.1
88-099-A

NPM 91-0704

TO: D. E. Duenkel

FROM: J. A. Pederson, Responsible Engineer

DATE: May 03, 1991

SUBJECT: RADIOGRAPHY CONCERNS FOR M.R. 88-099**

COPY TO: File M1.1 (M.R. 88-099A) ✓

Original Bechtel piping NDE requirements for the 2" tie-in to the 4" discharge header would have required 100% RT of the butt welds. However, per the Bechtel letter of March 14, 1991 to T. D. Mielke, the basis for whether or not to do radiography should be "the present day editions of ANSI B31.1."

The ANSI/ASME B31.1-1986 edition states that "for temperatures between 350° F and 750° F inclusive with all pressures over 1025 psig" that the requirement for butt welds is "RT for over NPS 2 with thickness over 3/4 inch." A visual is required for all sizes and thicknesses. Since the new Aux FW recirc piping is 2" schedule 80 piping (wall thickness = 0.218) tying into 4" schedule 80 piping (wall thickness = 0.337) only a visual inspection is required.

Julie Pederson

dn

MICROFILMED
JAN 26 1995

BECHTEL

•777 East Eisenhower Parkway
Ann Arbor, Michigan 48108
Mailing address: P.O. Box 1000
Ann Arbor, Michigan 48106-1000

March 14, 1991

BLP-91-024

T.D. Mielke
Point Beach Nuclear Plant
Wisconsin Electric Power Company
6610 Nuclear Road
Two Rivers, WI 54241

In reply refer to

Chron 04530

Subject: Point Beach Nuclear Plant
WEPCo Contract 174593
Bechtel Job 10447-050-039
CRITICAL SERVICE PIPING

Dear Mr. Frieling:

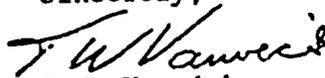
This responds to a verbal request for information from your Todd Mielke to Ted vanVick on March 11, 1991. Mr. Mielke inquired as to the basis for Bechtel specifying 100% radiography of butt welds in ANSI B31.1 critical piping in original construction of systems at the Point Beach nuclear station.

In the past, it was Bechtel practice to designate certain non-nuclear systems in a light water-cooled nuclear power plant as "critical". For these systems, the design conditions and service were considered to warrant that their pressure integrity be verified by examination over and above that required by code. This approach was adopted because earlier editions of ANSI B31.1 did not impose adequate NDE requirements to establish the desired confidence in the pressure integrity of some piping systems.

However, the later versions of ANSI B31.1 have incorporated acceptable NDE requirements for those piping systems. Therefore, we have discontinued the earlier approach of classifying piping systems into critical and noncritical categories. We believe that the present-day editions of ANSI B31.1 provide for the desired confidence in the pressure integrity of the piping systems.

If you have any questions, please advise.

Sincerely,


T.W. Vanvick
Project Engineer

^{JOA}
TWV/JOA/mv
031403

cc: J.O. Abel
G.D. Frieling, Downtown
B.O. Sasman, Downtown



Bechtel Power Corporation A unit of Bechtel Corporation

TABLE 136.4
MANDATORY MINIMUM NONDESTRUCTIVE EXAMINATIONS FOR PRESSURE WELDS OR WELDS TO PRESSURE RETAINING COMPONENTS

Type Weld	Piping Service Conditions and Nondestructive Examination		
	Temperatures Over 750°F (400°C) and at All Pressures	Temperatures Between 350°F (175°C) and 750°F (400°C) Inclusive With All Pressures Over 1025 psig [(7100 kPa (gage))]	All Others
Buttwelds (girth and longitudinal)	RT for over NPS 2. MT or PT for NPS 2 and less	RT for over NPS 2 with thickness over ¾ in. (19.0 mm). Visual for all sizes with thickness ¾ in. (19.0 mm) or less.	Visual for all sizes and thicknesses
Welded branch connections (size indicated is branch size) [see Note (7)]	RT for over NPS 4. MT or PT for NPS 4 and less	RT for branch over NPS 4 and thickness of branch over ¾ in. (19.0 mm) Visual for all sizes with branch thickness ¾ in. (19.0 mm) or less	Visual for all sizes and thicknesses
Fillet, socket, attachment, and seal welds	PT or MT for all sizes and thicknesses	Visual for all sizes and thicknesses	Visual for all sizes and thicknesses

NOTES:

- (1) All welds must be given a visual examination in addition to the type of specific nondestructive examination specified.
- (2) NPS — nominal pipe size.
- (3) RT — radiographic examination; MT — magnetic particle examination; PT — liquid penetrant examination.
- (4) RT of branch welds shall be performed before any nonintegral reinforcing material is applied.
- (5) The thickness of buttwelds is defined as the thicker of the two abutting ends after end preparation.
- (6) Temperatures and pressures shown are design.
- (7) In lieu of radiography of welded branch connections when required above, liquid penetrant or magnetic particle examination is acceptable and, when used, shall be performed at the lesser of one-half of the weld thickness or each ½ in. of weld thickness and all accessible final weld surfaces.
- (8) For nondestructive examination of the pressure retaining component, refer to the standards listed in Table 126.1 or the manufacturing specifications.
- (9) Acceptance standards for NDT performed are as follows: MT — see Para. 136.4.3; PT — see Para. 136.4.4; VT — see Para. 136.4.2; RT — see Para. 136.4.5.
- (10) Fillet welds not exceeding ¾ in. (6 mm) throat thickness which are used for the permanent attachment of nonpressure retaining parts are exempt from the PT or MT requirements of the above Table.