

7/11/14

ORIGINAL \*\*\*\*\* PBNP \*\*\*\*\* WO No: 0407919  
WO Priority: 2 \* UNIT 1 \* MWO \* UNIT 1 \*  
Resp Group: MM \*\*\*\*\* HEADER PAGE \*\*\*\*\* Step Print: 04/21/04

Equipment: R-1 System: RC HP Zone: U-1 0312  
Equipment Name: REACTOR VESSEL AND ASSEMBLY  
Physical Location: U1C/R-1 RV CAVITY Discovery Date: 04/21/04  
Serial Number: Safety Monitor: N  
Problem Description:  
REMOVE AND REPAIR STUCK BULLET.

Originator: BRYAN R L 6678 Outage ID: U1R28 Activity:  
Tag/Stkr Placed: N TAG #: 206029 Tag Lctn:  
Job Type: CORRECTIVE MAINTENANCE ON PL Project ID: Condition Report:  
Work Function: WORK ORDER  
Mod Req #: -

=====

QA: Y SEIS: 1 Operability Pre-Test: N Procedures:  
SR: Y LCO: N  
EQ: N PMT: Y Operability Post-Test: N Procedures:  
SSA: N CIV: N MRULE: Y  
A/P: P CACC:  
RRN: 93 - 0001 - - - Tech Spec Ref:  
QA Codes: 01 02 - - - Sect XI Class: 1

Tools Needed:

=====

Work Plan/Instructions reviewed. Planner: BRYAN R L 6678  
LINE SUPERVISOR: WELBIZIYI NAME: [Signature] DATE: 4/21/04  
=====

Risk: - PS PERSONNEL SAFETY  
Plant Conditions: SEE PROB DESC OR PROCEDURE Ignition Control Permit: N  
Other Conditions: Transient Combustible Permit: N  
Fire Barrier Penetration Permit: N Scaffolding: N Heat Trace: N RWP: Y

Is Screening for 10 CFR 50.59 or 72.48 required in accordance with NP 10.3.1?  
\_\_\_ Yes \_\_\_ No. If yes, attach applicable portions of form PBF-1515.

Equipment Isolation Required: N FME: Y  
ISO Tag Series #1: \_\_\_\_\_ ISO Tag #2: \_\_\_\_\_ ISO Tag #3: \_\_\_\_\_

Operability Pre-Test Complete. \_\_\_\_\_ Equipment Isolation as requested. \_\_\_\_\_  
Permission granted to perform Work.  
Ops DSS Notification Req: Y Ops DSS Signature: [Signature] Date: 4/21/04

Special Notification:

Information in this record was deleted  
in accordance with the Freedom of Information  
Act, exemptions 6  
FOIA/PA-2004-0282

Number of Steps: 001

Acct #: 00 - 00000 - 3612821 - -0030  
MFG Code: B/W Tech Manual Cntl #: 00210

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\* WORK ORDER CLOSEOUT \*

=====

Group Head Signature: \_\_\_\_\_ Date: 4/21/04  
=====

L-17

ORIGINAL \*\*\*\*\* PBNP \*\*\*\*\* WO No: 0407919001  
WO Priority: 2 \* UNIT 1 \* MWO \* UNIT 1 \*  
Resp Group: MM \*\*\*\*\* STEP DETAIL \*\*\*\*\* Step Print: 04/21/04  
Equipment: R-1 System: RC HP Zone: U-1 0312  
Equipment Name: REACTOR VESSEL AND ASSEMBLY  
Physical Location: U1C/R-1 RV CAVITY  
Sequence No: 01  
Short Desc: REMOVE BULLET

Need Date  
Sched Start Date:

PLANNED: WORK PROCEDURES:  
Crew: MM MM RMP 9053  
Shift: D D 1RMP 9096  
Class: 406 410 RMP 9312

Work Plan Description:  
REMOVE AND REPAIR STUCK BULLET NOSE USING ATTACHED WORK PLAN.

QC REVIEW REQUIRED: Y KINNEY, CALVIN DATE: 042104

As Found Condition:

WORK PERFORMED: Inspected Thermocouples and stalk with Binoculars. Removed  
Bullet nose from Head and inspecting the console no damage noted on removed bullet  
and C-clip. No damage noted on thermocouple stalks + connections. Minor surface scratch where C-clip  
RAISED up + over it's groove on head O-ring groove etc. Removed old O-ring + installed new + dip  
Installed a Bullet from furnace. Old bullet could use further inspection. 4-22-04

MTE: MDC -026

QAR:

ACTUAL USED:

CREW:

SHIFT:

Nights

0415 0615

WORKER CLASS:

410

420 810

NUMBER OF WORKERS:

4

5 6

TOTAL HOURS:

24

60 72

TTL EXPOSURE/STEP (MREM):

225 (57) 35

PARTS USED LIST ATTACHED: Y / (N)

WO TAGS REMOVED: Y / N / NA

WORK COMPLETE DATE: 4/21/04

EMPLOYEE NUMBER: 0407919001

EMPLOYEE NAME: D. Duncanson

\* WORK COMPLETED \*

Cause Failure Code: PM / SVC / NRM / SCL

As Found-Out of Spec: Y / N / NA

Machine History Review Required: Y / N

Failed Component: none

Corrective Action: N/A / RP / RE /

Downtime: 30 hrs

LINE SUPERVISOR: 0407919001

NAME: D. Duncanson

DATE: 4/22/04

\* EQUIPMENT RETURN TO SERVICE \*

Operability Post Testing:

EQUIP. TAKEN OOS - DATE: / / TIME: RETURN DATE: / / TIME:

Operability Procs Performed

NON OPS SUPV: / / / / /

NAME:

DATE:

DSS: / / / / /

NAME:

DATE:

REFERENCES:

1. NP 8.1.1 "Work Order Processing"
2. NP 4.2.20 "Radiation Work Permit"
3. NP 4.2.3 "ALARA Review Procedure"

RWP #: \_\_\_\_\_  
 Date Issued: \_\_\_\_/\_\_\_\_/\_\_\_\_  
 Actual RWP Exposure: \_\_\_\_\_  
 In rem: \_\_\_\_\_

PBNP CHAMPS RWP REQUEST FORM

Unit: PB1 Outage ID: U1R28 Activity:

Equipment: R-1

Equipment Name: REACTOR VESSEL AND ASSEMBLY

System: RC Physical Location: U1C/R-1 RV CAVITY

WO Number: 0407919 Other work documents: \_\_\_\_\_

WO Priority: 2 Date/Time Required: \_\_\_\_/\_\_\_\_/\_\_\_\_ : \_\_\_\_ : \_\_\_\_ Duration: \_\_\_\_\_

Critical Path: Yes No Responsible Group: MM HP Zone: \_\_\_\_\_

Protected Worker Log Required: Yes No

Job Title: REMOVE BULLET

THE FOLLOWING ITEMS SHOULD BE CONSIDERED WHEN INITIATING AN RWP

- |                                 |                                 |
|---------------------------------|---------------------------------|
| -Work Area Access/Egress        | -Decon/Containments             |
| -Audio/Visual Aids              | -Source Term Reduction          |
| -Tool Requirements              | -Remote Operations              |
| -Filling/Flushing/Draining      | -Shielding                      |
| -Temporary Ventilation          | -Work Coordination              |
| -Radiological Hold Points       | -Pre Job Briefing               |
| -Review Worker Dose Status      | -Special Training/Mockups       |
| -Perform Work In Low Dose Areas | -Radios/Communication Equipment |

WORK PLAN AND SPECIAL HEALTH PHYSICS INSTRUCTIONS

Est. Labor Hours For Job: 15.00 Est. Exposure (mrem) 0

Review of Est. Exposure Completed (HP): \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Supervisor Pre-job Brief Rqd: Work Group: YES/NO HP: YES/NO

Originator: \_\_\_\_\_ Phone/Page# \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Sup. Ini.

\* Alara Review Required: YES/NO (Required if total est. dose to individual is >1 rem or total est. collective dose is >2 rem.)

PBF 9923C (Use back of sheet as required)

CHAMPS GENERATED

**WO WORK PLAN**

Work Control Document: 0407919

UNIT: PB\_1\_

Equipment ID: R-1

Equipment Description: REACTOR VESSEL AND ASSEMBLY


Work Plan Originator: Rick Bryan phone 6678 pager 5616

Date: 4/21/04

**WORK SCOPE**

<b>WORK SCOPE and PURPOSE</b>	Remove stuck Cono-seal bullet, using non-intrusive equipment perform a visual inspection of cono-seal stalk, remove the stuck bullet and inspect stalk, facilitate repairs and install bullet.
<b>INITIAL CONDITIONS</b>	Head removed
<b>DANGER TAG SCOPE</b>	None
<b>DANGER TAG REFERENCES</b>	None
<b>LIMITATIONS AND PRECAUTIONS</b>	Refueling Cavity is an FME Zone 1. Work will be performed over the open vessel and out of the man basket. Additional briefings are required for man basket usage.
<b>TOOLS AND MATERIALS</b>	Dedicated crane operator, man basket, tools, M&TE and parts listed in RMP 9312.

**QUALITY CONTROL**

<b>QC REVIEW OF WORK PLAN</b> (independent QC review required on QA classified work order only) NA if non-QA work order Any change in scope requires WO WP review by QC inspector.	 QC INSP.	4/21/04 Date
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**SUPPORT**

<b>SUPPORT</b>	<input checked="" type="checkbox"/> Engineering
	<input checked="" type="checkbox"/> HP
	<input checked="" type="checkbox"/> Maintenance Dedicated Crane operator
	<input checked="" type="checkbox"/> Crane <input type="checkbox"/> TB <input type="checkbox"/> PAB <input checked="" type="checkbox"/> Polar <input type="checkbox"/> Other
	<input type="checkbox"/> Other

**WO WORK PLAN**

Work Control Document: 0407919

UNIT: PB\_1\_

Equipment ID: R-1

Equipment Description: REACTOR VESSEL AND ASSEMBLY

Work Plan Originator: Rick Bryan phone 6678 pager 5616

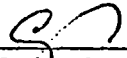
Date: 4/21/04

**PRE-JOB BRIEF**

Supervisor / Job Leader to conduct pre-job brief using PBF-9217.

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

PRE-JOB BRIEF COMPLETED. Medium Risk. Must be documented and lead by FLS.

  
 Supervisor or Job Leader

4-21-04 Date

**NOTES**

**FME:** Tools and equipment shall be checked for loose parts and debris and temporary covers should be installed for foreign material exclusion (FME) of system/components per Exclusion of Foreign Material from Plant components and Systems, NP 8.4.10.

**NOTE:** IF inspections or discrepancies require modifications to Work Scope:  
           THEN **STOP** work,  
           place equipment in **SAFE** condition,  
           and **NOTIFY** Supervision.

**NOTE:** The Control Room / the Work Control Center / and the watchstander (as appropriate) shall be informed of the status of jobs which:  
           bring in alarms,  
           affect indications,  
           and other work being performed on operating equipment.

**NOTE:** All workers shall perform all Danger Tagging requirements as defined in NP 1.9.15

**NOTE:** When replacing parts, compare the old part to the new part to verify it is an acceptable replacement.

**NOTE:** If work scope changes, an R/R form may be required for parts replacement or repair.

**NOTE:** Any pen and ink change to work plan requires initial and date by the change.

**NOTE:** Write WO number on top/header of any supplemental pages added to work package, i.e., forms, procedures, checklists...

**CAUTION**

ADDITIONAL briefings and inspections are required for the use of the Man Basket. These SHALL be performed prior to using the basket.

**WO WORK PLAN**

Work Control Document: 0407919

UNIT: PB\_1\_

Equipment ID: R-1

Equipment Description: REACTOR VESSEL AND ASSEMBLY

Work Plan Originator: Rick Bryan phone 6678 pager 5616

Date: 4/21/04

Hold Point	Step No	Work Plan Description	Worker	Date
	1.	Perform a non-intrusive inspection of the upper internals and T/C bundle using available equipment. Document inspection results below. <u>NO Damage noted, NO FIRE. Looks like all is intact.</u>	<u>OK</u> MT	<u>4-21-04</u> DATE
<b>CAUTION:</b> Use Caution when removing rag. Coordinate with RP prior to retrieving any unidentified parts/material.				
	2.	Inspect bullet nose/ head penetration for parts and damage. If free, bullet nose may be removed and set aside. If jammed, notify Issue Manager for further directions prior to proceeding. Retain any retrieved parts for evaluation. Document results below. <u>Bullet nose was free so we removed it.</u> <u>Inspection was performed NO Damage noted.</u>	<u>OK</u> MT	<u>4-21-04</u> DATE
HOUSE KEEPING	3.	Remove all debris, tools, and materials from the area. Ensure all work areas meet PBNP housekeeping expectations.	<u>OK</u> MT	<u>4-21-04</u> DATE

**WO WORK PLAN**

Work Control Document: 0407919

UNIT: PB\_1\_

Equipment ID: R-1

Equipment Description: REACTOR VESSEL AND ASSEMBLY

Work Plan Originator: Rick Bryan phone 6678 pager 5616


Date: 4/21/04

**POST-JOB BRIEF**

Post-Job Brief may be performed prior to Operations Return To Service Testing.

Conduct post-job debrief using PBF-9218. Document lessons learned, good practices, problems encountered, etc. on feedback form. Debrief should include all applicable work groups.

POST-JOB DEBRIEF COMPLETED

  
Supervisor or Job Leader4-21-04 Date**FEEDBACK**

Feedback form may be completed and attached to work package prior to Operations Return To Service Testing and Post-Job Briefing.

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

CR  
MT4-21-04  
DATE

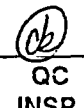
POINT BEACH NUCLEAR PLANT  
**WO WORK PLAN REVISION 1**

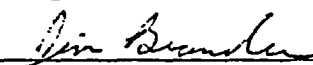
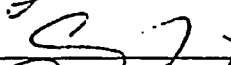



Work Control Document: 0407919  
 Equipment ID: R-1  
 Equipment Description: REACTOR VESSEL AND ASSEMBLY  
 Work Plan Originator: Rick Bryan phone 6678 pager 5616

UNIT: PB\_1

Date: April 21, 2004

WORK PLAN REVISION	
<b>REASON for REVISION</b>	To continue with recovery of the stuck bullet nose and facilitate any required repairs. If the retaining clip and O-ring were not found during the inspection in step 2 of the original work plan, additional inspections of the upper internals will be required.
<b>WORK SCOPE and PURPOSE</b>	Continue with inspections for Foreign Material, retrieval of foreign material, Thermocouple stalk inspections, repairs if required and further actions to support the Apparent Cause Investigation.
<b>RISK MANAGEMENT</b>	At any time the man basket is positioned over the exposed vessel, the risk level becomes HIGH. Additional cautions and directions might be required during this time. While tag lines and personnel are stabilizing the man basket, the level of personnel safety increases. Additional safety precautions will be required for this work.
<b>DANGER TAG SCOPE CHANGE?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No    If yes, what is change?

QUALITY CONTROL	
<b>QC REVIEW OF WORK PLAN</b> (independent QC review required on QA classified work order only) NA if non-QA work order Any change in scope requires WO WP review by QC inspector.	<div style="display: flex; justify-content: space-between;"> <div>                           QC INSP.                     </div> <div>                         4/21/04                          Date                     </div> </div>

TECHNICAL REVIEWS		
<input checked="" type="checkbox"/>	Plant Mgt Rep	Signature:  Date: 4/22/04
<input checked="" type="checkbox"/>	Maintenance	Signature:  Date: 4/22/04
<input checked="" type="checkbox"/>	Operations	Signature:  Date: 4/22/04
<input checked="" type="checkbox"/>	Engineering	Signature:  Date: 4/22/04
<input checked="" type="checkbox"/>	Radiation Protection	Signature:  Date: 4/22/04



POINT BEACH NUCLEAR PLANT  
**WO WORK PLAN REVISION 1**

Work Control Document: 0407919  
 Equipment ID: R-1  
 Equipment Description: REACTOR VESSEL AND ASSEMBLY  
 Work Plan Originator: Rick Bryan phone 6678 pager 5616

UNIT: PB\_1

Date: April 21, 2004

Hold Point	Step No	Work Plan Description	Worker	Date
From step 2 of work plan.				
<b>NOTE:</b> During any work in the vicinity of the head, upper internals or bullet, direct RP support and coverage will be required.				
<b>CAUTION:</b> ANY loose items found on the upper internals have the potential to have HIGH dose rate and contamination. DO NOT retrieve any items without RP approval and concurrence.				
	R1-1.	If any loose parts, foreign material of other unidentified items are found on the upper internals THEN an entry into the upper cavity will be required to positively identify and retrieve the loose items. Document below any foreign material found. If foreign material is not on the upper internal plate, this step can be N/A'd.  _____ _____ _____	<u>CL</u> MT	<u>4-22-04</u> DATE
	R1-2.	If material retrieval is required, coordinate with RP and other support groups as required to remove the material. If not required this step may be N/A'd.	<u>N/A CL</u> MT	<u>4-23-04</u> DATE
	R1-3.	When all foreign material, loose parts and other debris have been removed from the upper internal plate, proceed with step R1.4.	<u>CL</u> MT	<u>4-22-04</u> DATE
<b>NOTE:</b> Steps R1.4, R1.5 and R1.6 can be performed concurrently to reduce job duration.				
	R1-4.	Operations to flood the upper cavity to a depth of 2 to 3 feet. This will provide added shielding during man basket inspections.	<u>CL FARM</u> OPS	<u>4-23-04</u> DATE
	R1-5.	Perform inspections as required to use the man basket. <u>As Step 11. CL</u> 4-22-04	<u>JS</u> MT	<u>4-22-04</u> DATE
<b>CAUTION:</b> The rope used for tag line SHALL be visible if it falls into the cavity. <u>Go To Revision 2.</u>				
	R1-6.	Personnel using tag lines to stabilize the man basket, locate appropriate places to tie of safety lanyards.	<u>NA</u> See Rev 2 MT 4-22-04	<u>DATE</u>
	R1-7.	When cavity is flooded to the correct level, proceed with work plan.	<u>NA</u> See Rev 2 MT 4-22-04	<u>DATE</u>
<b>CAUTION:</b> EXTREME caution is to be used while stabilizing the man basket with tag lines.				

**WO WORK PLAN REVISION 1**

Work Control Document: 0407919

UNIT: PB\_1\_

Equipment ID: R-1

Equipment Description: REACTOR VESSEL AND ASSEMBLY

Work Plan Originator: Rick Bryan phone 6678 pager 5616

Date: April 21, 2004

Hold Point	Step No	Work Plan Description	Worker	Date
	R1-8.	While stabilizing the man basket with tag lines, perform a close inspection of the T/C bundle and associated seals. Use available equipment as required to perform this inspection. Document inspections results below.          Provide this information to engineering for evaluation.	NA MT See Rev 2 DGF 4-22-04	DATE
	R1-9.	DO NOT proceed with any repairs until approval has been given by the on-site Management Rep. <u>at 4-22-04</u>  Management Rep. <u>at 4-22-04</u> Date	NA MT See Rev 2 DGF	DATE 4-22-04
<b>NOTE:</b> If the old bullet nose is deemed acceptable for reuse, it will be installed, otherwise a new bullet nose will be installed.				
	R1-10.	Using the man basket with appropriate safety precautions, install the bullet nose over the T/C bundle. Install new spring clip and O-ring. Indicate below which bullet nose was used.  <input type="checkbox"/> New Bullet Nose <input type="checkbox"/> Old Bullet Nose	NA MT See Rev 2 DGF	DATE 4-22-04
HOUSE KEEPING	R1-11.	Remove all debris, tools, and materials from the area. Ensure all work areas meet PBNP housekeeping expectations.	MT	DATE 4-22-04
	R1-12.	Release the upper internals and head for continued refueling activities.	MT	DATE 4/22/04
	R1-13.	Engineering to determine if further actions are required to support repairs (if needed) and establish the Apparent Cause. Document any further actions below.  <u>No repairs required based on documentation in step R2-3 and discussion with responsible workers. O-ring groove and thermocouple connections reported to be in good condition. Equipment should be considered acceptable for use as is.</u>	ENG	DATE 4/22/04
	R1-14.	If additional work is required, return package to planning with additional work instructions for incorporation.	MT	DATE 4/22/04
	R1-15.	Return to closeout section of work plan to complete task.	MT	DATE 4/22/04

**WO WORK PLAN REVISION 2**

Work Control Document: 0407919

UNIT: PB 1

Equipment ID: R-1

Equipment Description: REACTOR VESSEL AND ASSEMBLY


Work Plan Originator: Dave French x6291/pgr5098

Date: April 22, 2004

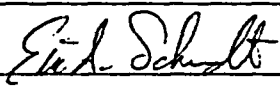
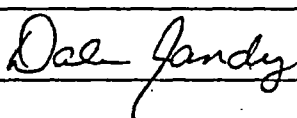
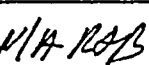
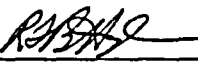
**WORK PLAN REVISION**

<b>REASON for REVISION</b>	To improve on the steps within Revision One and to provide additional guidance from RMP 9312.
<b>WORK SCOPE and PURPOSE</b>	To provide additional guidance from RMP 9312.
<b>DANGER TAG SCOPE CHANGE?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, what is change?

**QUALITY CONTROL**

<b>QC REVIEW OF WORK PLAN</b> (independent QC review required on QA classified work order only) NA if non-QA work order Any change in scope requires WO WP review by QC inspector.	 QC INSP.	4-22-04 Date
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**SUPPORT REVIEWS**

<b>SUPPORT</b>	<b>NOTE:</b> PMT requirements have been updated to reflect scope change. OPS to ensure return to service testing requirements have been addressed. Signatures below indicate a review and acceptance of the PMT requirements.		
	<input checked="" type="checkbox"/> Engineering	Signature: 	Date: 4/22/04
	<input type="checkbox"/> Maintenance	Signature:	Date:
	<input checked="" type="checkbox"/> HP	Signature: 	Date: 4/22/04
	<input type="checkbox"/> I&C	Signature:	Date:
	<input type="checkbox"/> Security	Signature:	Date:
	<input checked="" type="checkbox"/> Operations	Signature: 	Date: 4/22/04
	<input type="checkbox"/> Other	Signature:	Date:
Maintenance Supervisor release for Work:			
Signature: 		Date: 4/22/04	

**WO WORK PLAN REVISION 2**

Work Control Document: 0407919

UNIT: PB\_1

Equipment ID: R-1

Equipment Description: REACTOR VESSEL AND ASSEMBLY

Work Plan Originator: Dave French x6291/pgf5098

Date: April 22, 2004

Hold Point	Step No	Work Plan Description	Worker	Date
From AFTER step <u>R1-5</u> of work plan.				
<b>CAUTION:</b> The rope used for tag line SHALL be visible if it falls into the cavity.				
	R2-1.	When cavity is flooded to the correct level, proceed with work plan.	<u>JS</u> MT	<u>4.22.9</u> DATE
	R2-2.	Personnel using tag lines to stabilize the man basket, locate appropriate places to tie of safety lanyards.	<u>JS</u> MT	<u>4.22.9</u> DATE
	R2-3.	While stabilizing the Man-Basket with tag-line:. <input type="checkbox"/> Perform a close inspection for damage of the machined surface of the column where the sleeve retaining clip engages <input type="checkbox"/> Perform a close inspection of the T/C bundle and associated seals; looking for any "gross" damage (ie.: cracks, gaps, defects, connector(s) separated from wires, ...). <input type="checkbox"/> Use available equipment as required to perform this inspection. <input type="checkbox"/> Do NOT proceed with any repairs at this time. Comments: <u>O-Ring GROOVE SAT</u> <u>NO GROSS DAMAGE OF T/C CONNECTORS</u> <u>MINOR surface scratch where C-clip</u> <u>raised up AND OVER IT GROOVE</u>	<u>JS</u> MT	<u>4.22.9</u> DATE
	R2-4.	Using attachment "C" from RMP 9312, for Unit 1 (attached), inspect each T/C tag to verify that it is still present. Note any deficiencies. Comments: <u>A7 BLANKED OFF NO TAG</u>	<u>JS</u> MT	<u>4.22.9</u> DATE
<b>NOTE:</b> The following steps deal with restoring the T/C bundle seal (Bullet Nose).				
	R2-5.	IF the O-Ring is NOT pre-greased; THEN, grease the O-Ring (Using Parker Super O-Lube, per Engineering (Eric Schmidt)).	<u>JS</u> MT	<u>4.22.9</u> DATE

**WO WORK PLAN REVISION 2**Work Control Document: 0407919UNIT: PB 1Equipment ID: R-1Equipment Description: REACTOR VESSEL AND ASSEMBLYWork Plan Originator: Dave French x6291/pgr5098

Date: April 22, 2004

Hold Point	Step No	Work Plan Description	Worker	Date
	R2-6.	Place the O-Ring in the indentation on the column.	<u>JS</u> MT	<u>4.22.04</u> DATE
	R2-7.	Carefully group the thermocouple connectors together to allow them to slide into the protective sleeve (Bullet).	<u>JS</u> MT	<u>4.22.04</u> DATE
	R2-8.	Carefully, lower a SPARE protective sleeve over the connectors; and, slide into place on the column tube.	<u>JS</u> MT	<u>4.22.04</u> DATE
	R2-9.	Install the retaining clip; and, ensure that the clip fits into the machined groove in the sleeve (Bullet), and the bullet fit is correct.	<u>JS</u> MT	<u>4.22.04</u> DATE
	R2-10.	Return to BEFORE step <u>R1-11</u> of work plan to complete task.	<u>JS</u> MT	<u>4-22-04</u> DATE

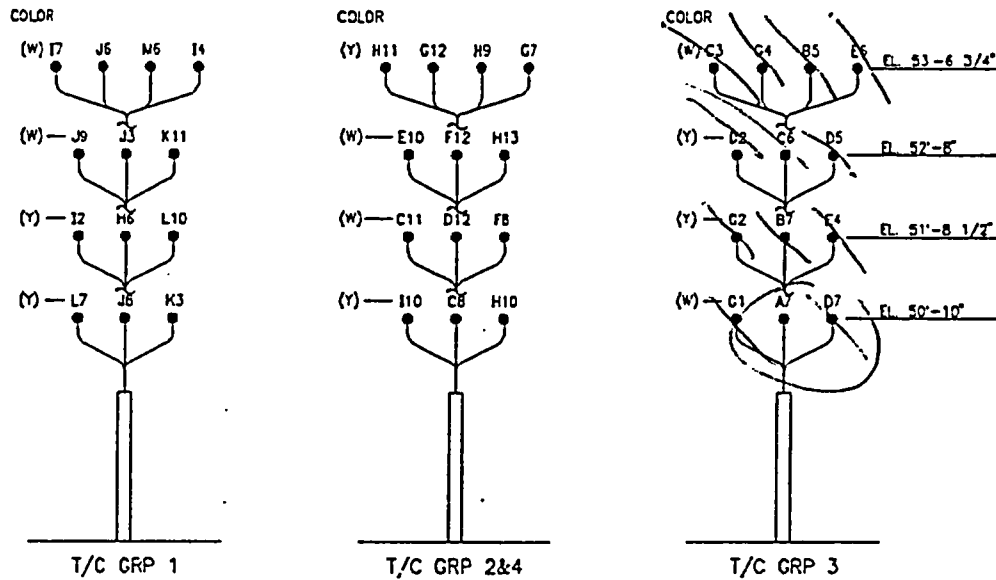
POINT BEACH NUCLEAR PLANT  
ROUTINE MAINTENANCE PROCEDURES

REMOVAL AND INSTALLATION OF REACTOR VESSEL  
HEAD INSTRUMENTATION PORT CONOSEALS

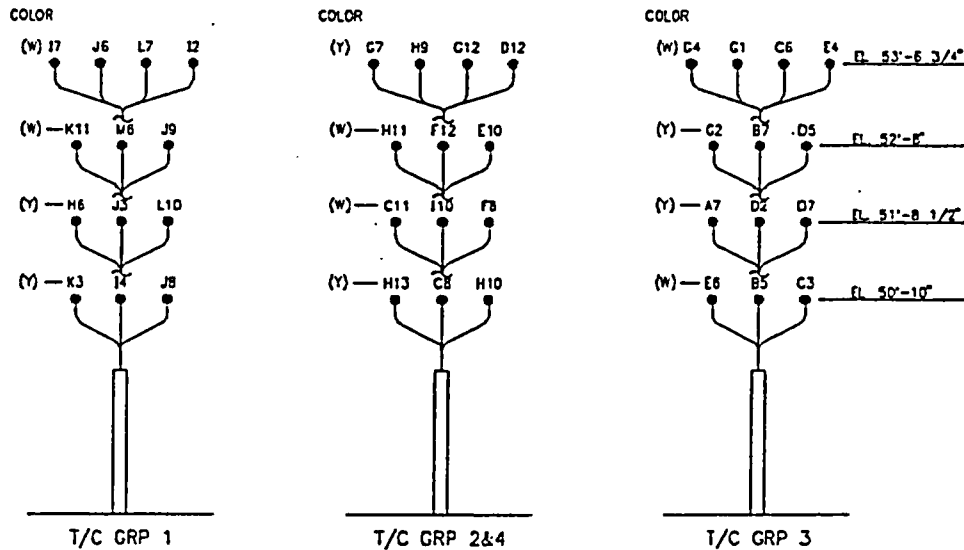
From:  
RMP 9312  
SAFETY RELATED  
Revision 7  
November 26, 2003

FOR WO#  
0407919  
REV. 2.231  
4-22-04

ATTACHMENT C  
THERMOCOUPLE RISER CONNECTIONS



UNIT 1 THERMOCOUPLE RISER CONNECTIONS  
AND  
CORRESPONDING CORE LOCATION



UNIT 2 THERMOCOUPLE RISER CONNECTIONS  
AND  
CORRESPONDING CORE LOCATION

## Nuclear Power Business Unit

**Work Order/Document No.**

0407919

Work Group Post-Maintenance Testing *		INITIALS & DATE	
		Pre-Release	Post Work-RTS **
None for Rev 0 of package		RB 4/21/04	AL-4-21-04
PMT Matrix Attached? <input type="checkbox"/> Y Specify _____ <input checked="" type="checkbox"/> N <input type="checkbox"/> N/A (✓ box)			
Section XI Equipment? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N (✓ box) Maint. Rule? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N (✓ box)			
Section XI Engineering Review *		*** / **	
N/A		RB for Leyde Hawk 4/22/2004	A 4/22/04
Engineering Review *		*** / **	
IT-230 to check for RCS Leakage		ALB 4/22/04	A 4/22/04
Operations - SRO Review for PMT Adequacy & Operability Testing			
done for Rev 0		A 4/24	A 4/22/04
TS-32			
IT-230 } Rev 2			
Comments / Resolutions			
Test requirements listed in the work plan (SRO Review)? <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A		/	

\*\*\* May be N/A'd by WCC SRO or designee for "S" type WOs or "C" type WOs where a PMT is not required by procedure scope.

Point Beach Nuclear Plant  
CATEGORIZATION AND MITIGATION OF RISK

WO#: 0407919

**CATEGORIZE ACTIVITY RISK**

Note: [ ] indicates CHAMPS risk code

Factors that Increase Probability	Y	N
*First time evolution [FT]		<u>X</u>
*Complex activities [CA]		<u>X</u>
*Infrequently performed evolution [IP]		<u>X</u>
Abnormal or unusual conditions [AC]		<u>X</u>
Distractive environment [DE]		<u>X</u>
Internal or external OE indicates potential for re-work, failure, error or event [OE]		<u>X</u>
Limited training or experience [TE]		<u>X</u>
Time constraints [TC]		<u>X</u>
Coordination of multiple groups [MG]		<u>X</u>
Plan change [PC]		<u>X</u>
Containment entry at Power [CE]		<u>X</u>

Factors that Increase Consequences	Y	N
*Personnel safety [PS]	<u>X</u>	
*Potential for unit trip/plant transient [TT]		<u>X</u>
*Reactivity management concern [RM]		<u>X</u>
*Potential for loss of decay heat removal [DH]		<u>X</u>
*Potential for significant equipment damage [ED]		<u>X</u>
Radiological safety concern (e.g. potential for change due to work activities such as grinding, filter changeout, resin sluice) [RH]		<u>X</u>
Potential for safety system loss [SL]		<u>X</u>
Tech. Spec. concern (e.g., exceeding one half of LCO time, surveillance approaching late date, mode change) [TS]		<u>X</u>
Potential for safety system actuation [SA]		<u>X</u>
Adverse impact on emergency plan [EP]		<u>X</u>
Environmental concern (e.g. spills or releases) [EV]		<u>X</u>
Flooding (e.g., use of freeze seals or plugs, draining or filling major systems) [FL]		<u>X</u>
Foreign material intrusion (e.g. SFP work) [FM]	<u>X</u>	
Potential for unexpected generation loss [GL]		<u>X</u>
Regulatory risk [RR]		<u>X</u>
High visibility/Manager discretion [HV]		<u>X</u>

**Assign Risk Category based on the following guidelines:**

1. If none of the factors that increase probability or consequence is present, then the risk category is normal.
2. If factors that increase probability are present then the risk category is medium.
3. If factors that increase consequences are present then the risk category is medium.
4. If one or more of the asterisked factors that increase probability or one or more of the asterisked factors that increase consequences are present, then the risk category is medium or high.
5. If one or more of the asterisked probability factors and one or more of the asterisked consequence factors are present, then the activity should be categorized as high risk.

Circle Risk Category: HIGH **MEDIUM** NORMAL



Point Beach Nuclear Plant  
CATEGORIZATION AND MITIGATION OF RISK

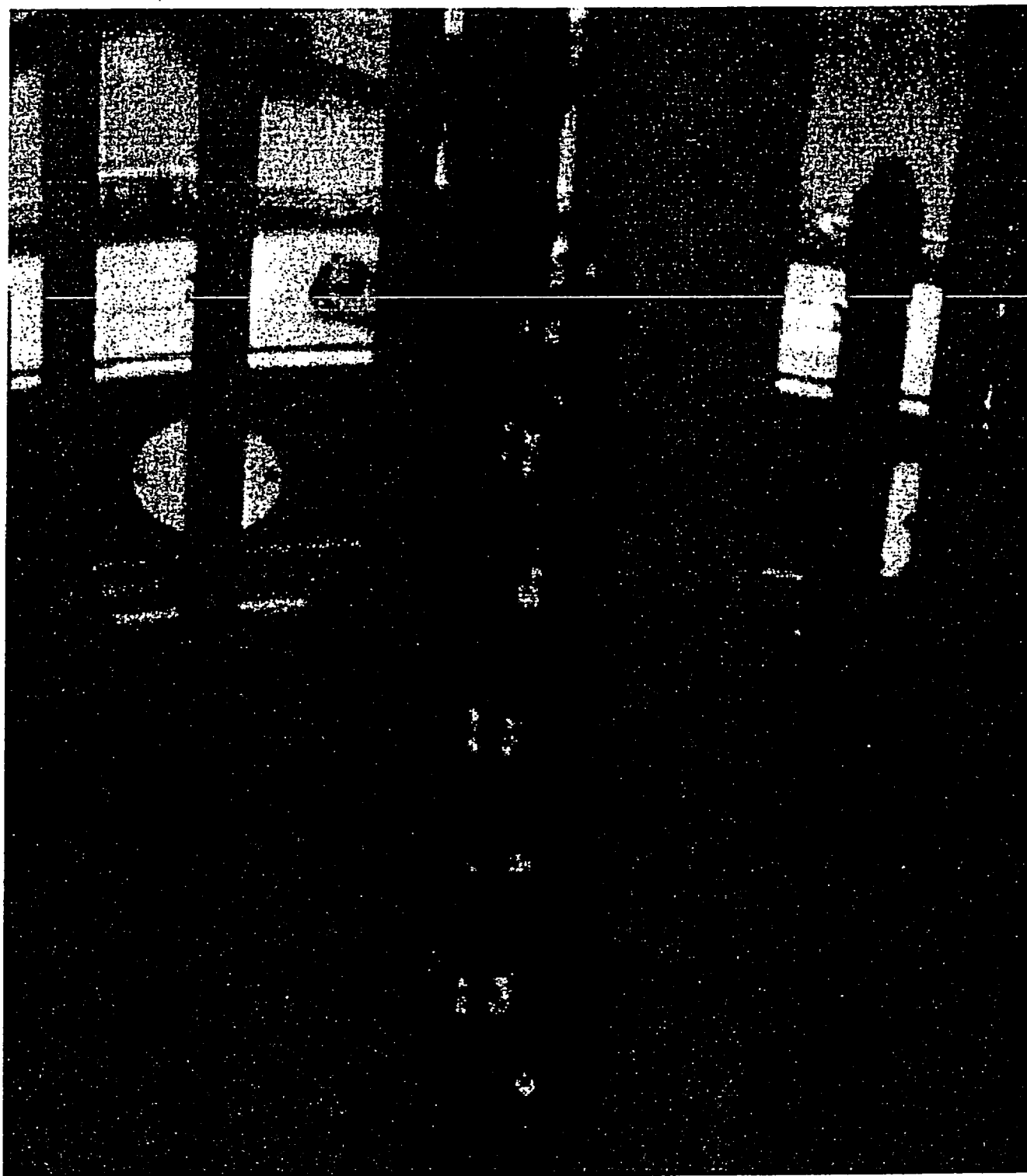
**RISK MITIGATION COMPENSATORY ACTIONS**

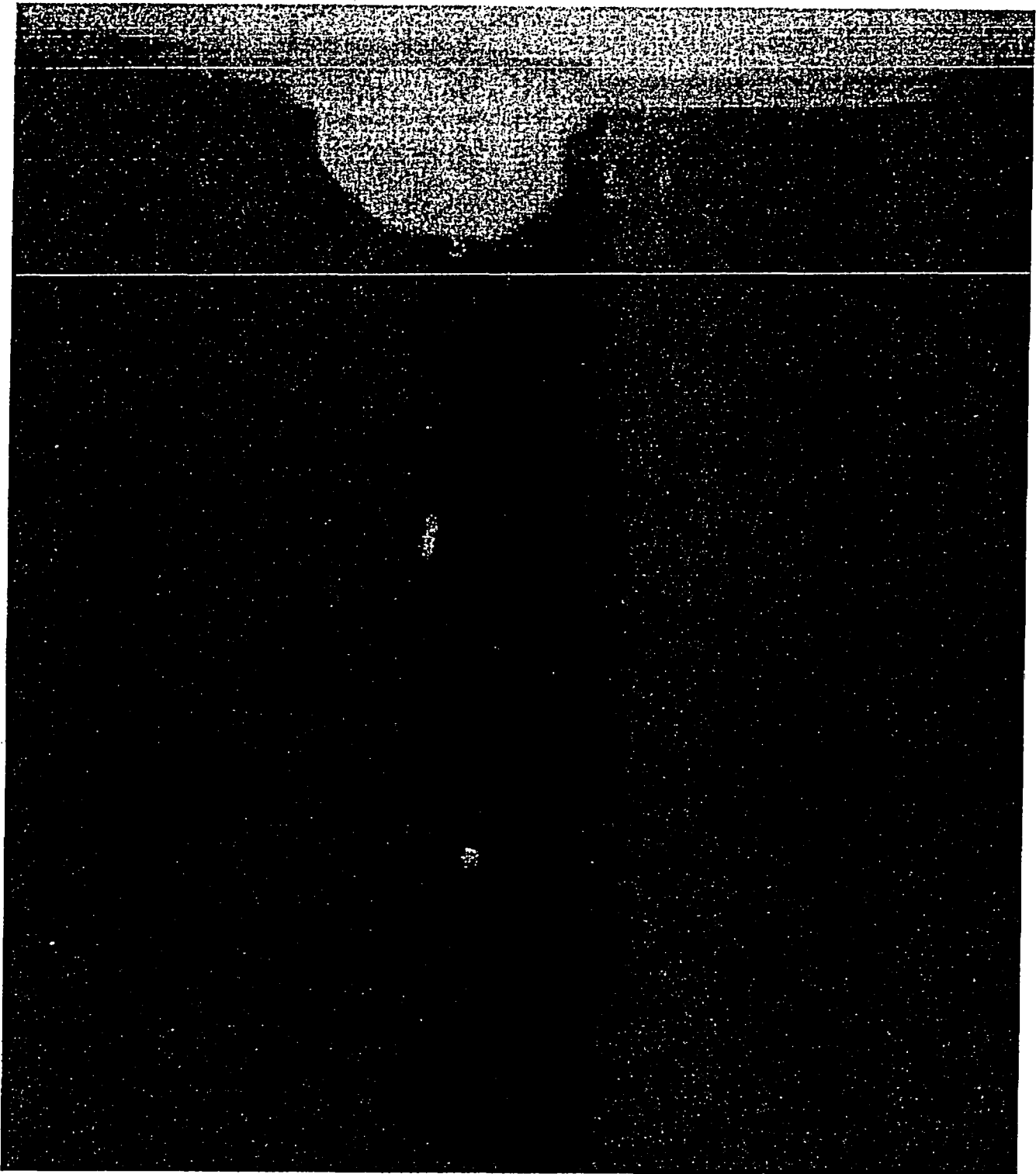
Risk Category	Compensatory Actions
High	1, 2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Medium	3, 4, 8, 9, 12, 13
Normal	Normal work management processes

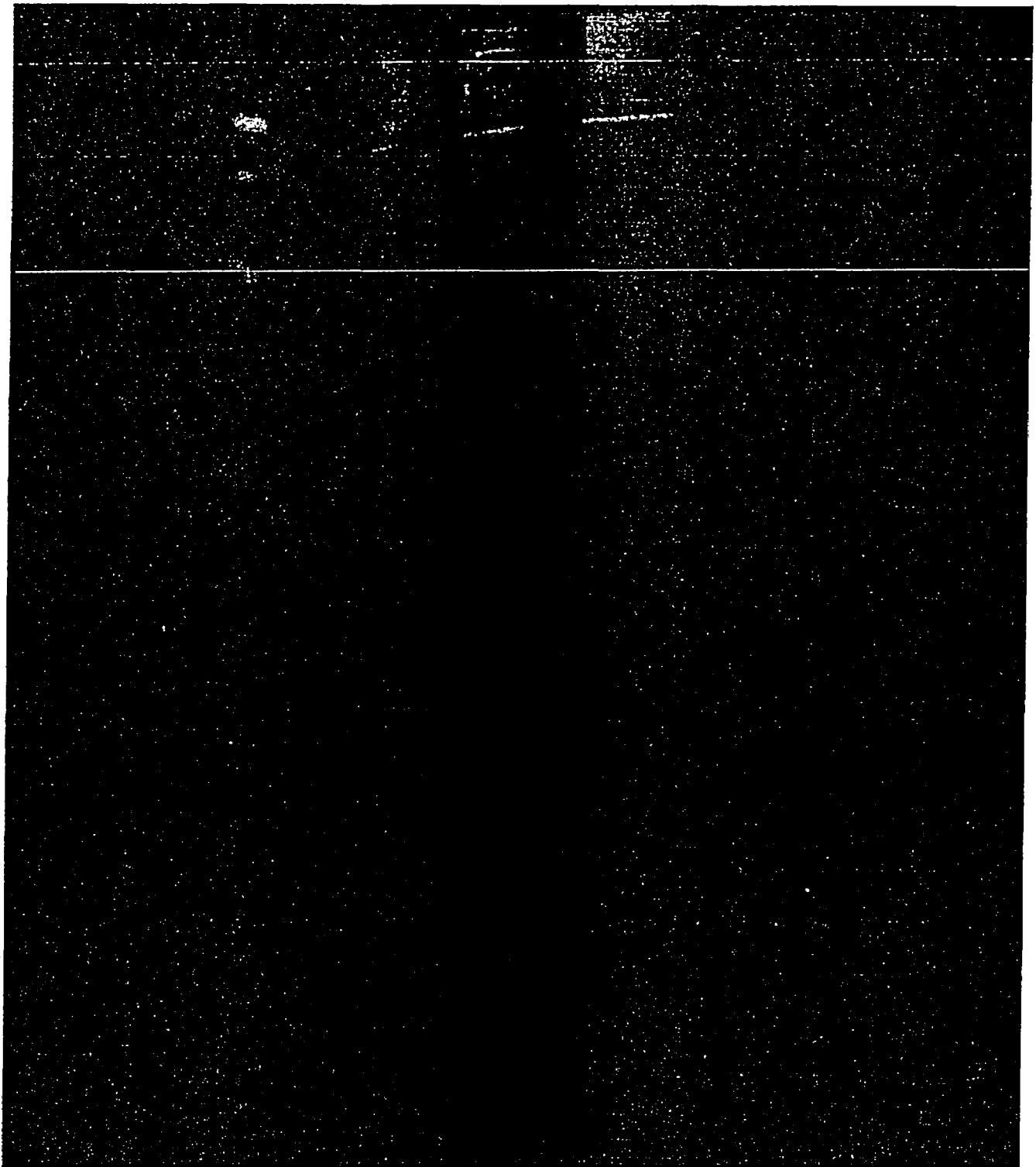
Compensatory Actions	Y	N	NA
1) Complete look-ahead plan (section 4.2).			X
2) Utilize high risk pre-job briefing process (section 4.3)			X
3) Documented pre-job briefing required. (section 4.3).	X		
4) FLS attends or conducts pre-job briefing to ensure adequacy.	X		
5) Manager (general supervisor or above) attends or conducts pre-job briefing			X
6) Mock-up required prior to work or just-in-time training required prior to work			X
7) Fragnet schedule developed for activity.			X
8) Repair contingencies developed.	X		
9) Critical steps identified and appropriate steps identified in accordance with NP 2.1.2. Independent Verification and Concurrent Checks.	X		
10) Pictures taken of components at key steps for use in turnovers, documentation, training and post-job briefings.	X		
11) FLS manages turnover meeting with all disciplines to ensure adequacy.	X		
12) Conduct post-job briefings (section 4.5).	X		
13) Required field observation points identified.	X		

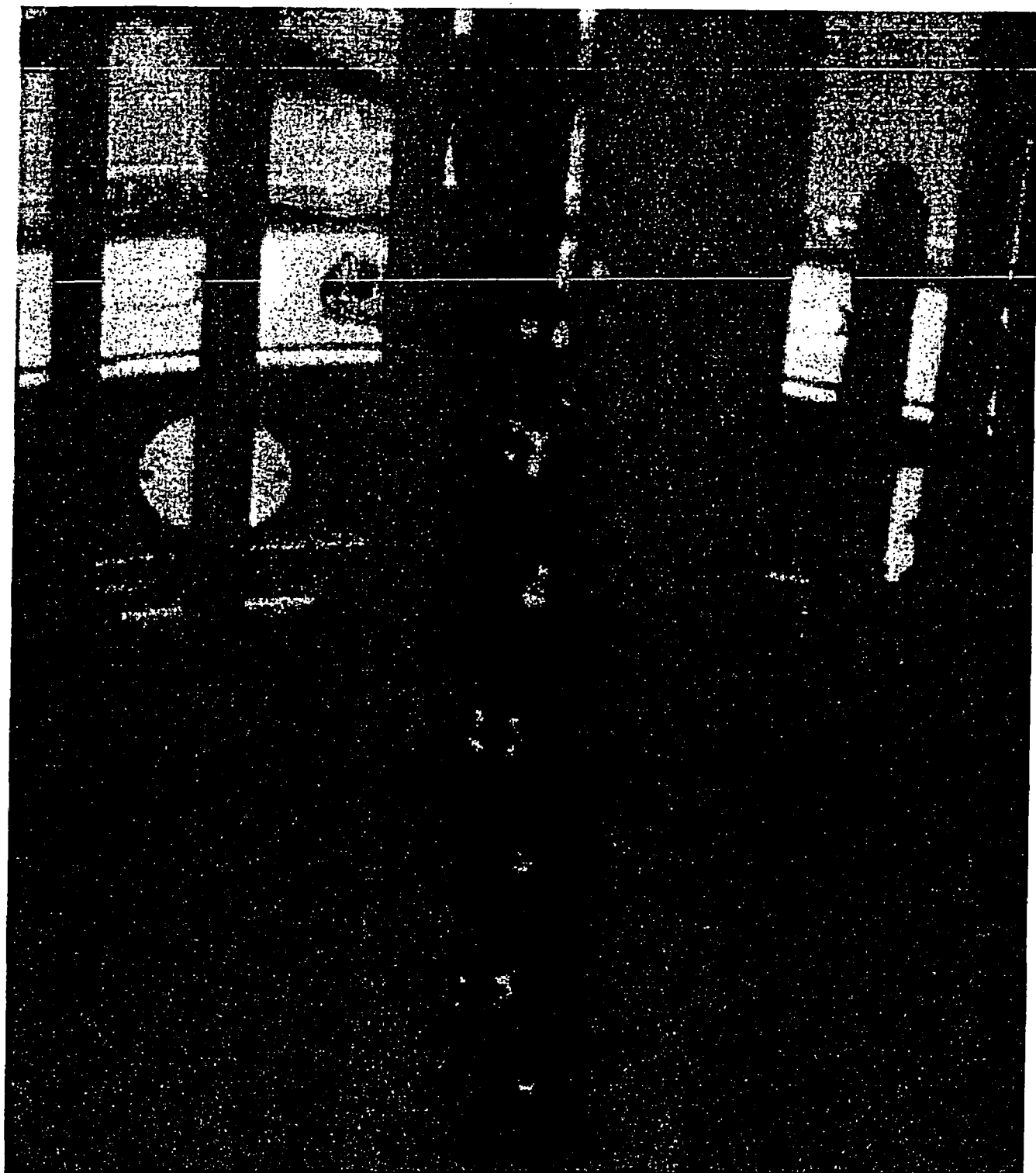
Explain "No" answers: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

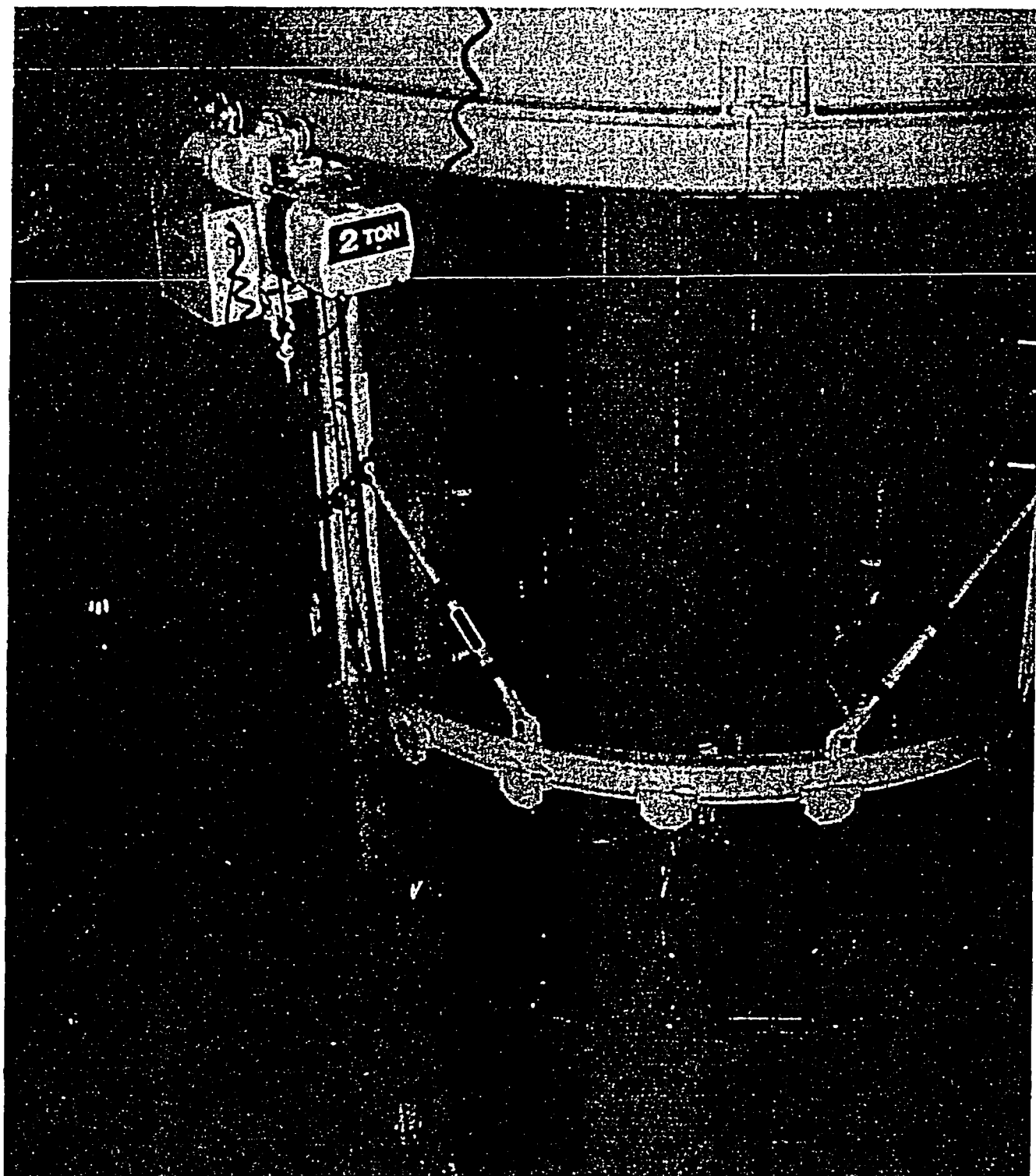
File with work package or controlling document.

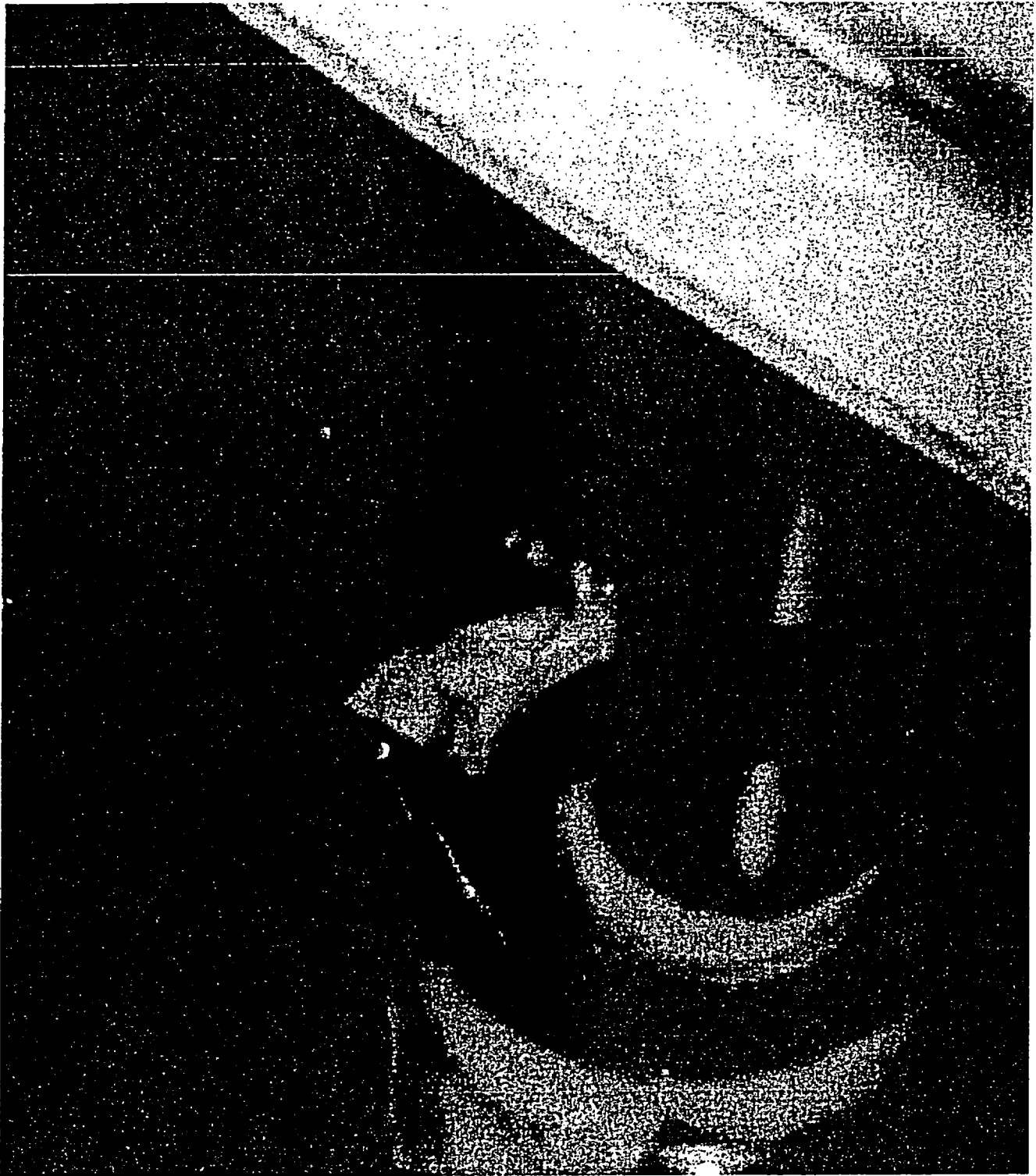


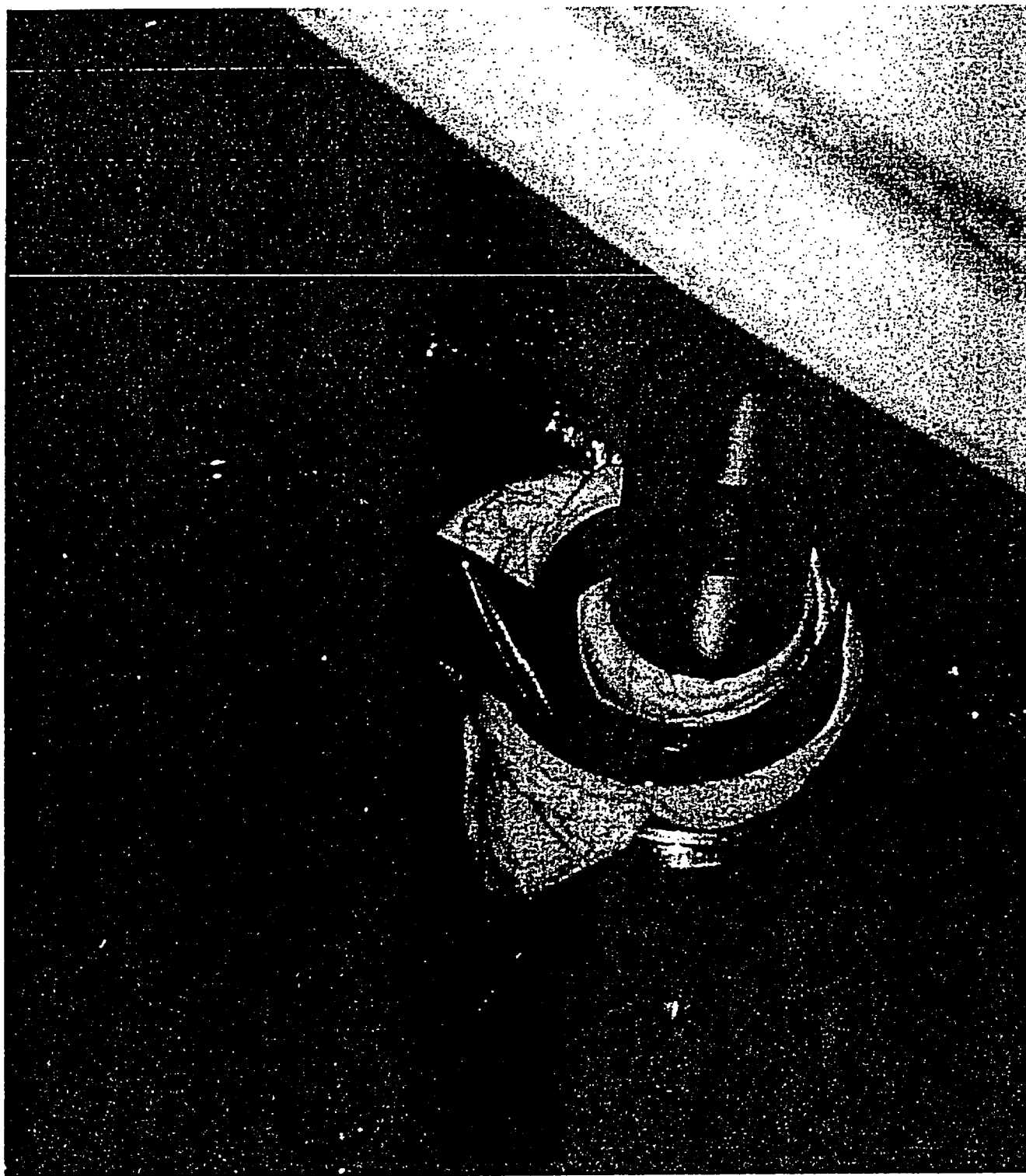




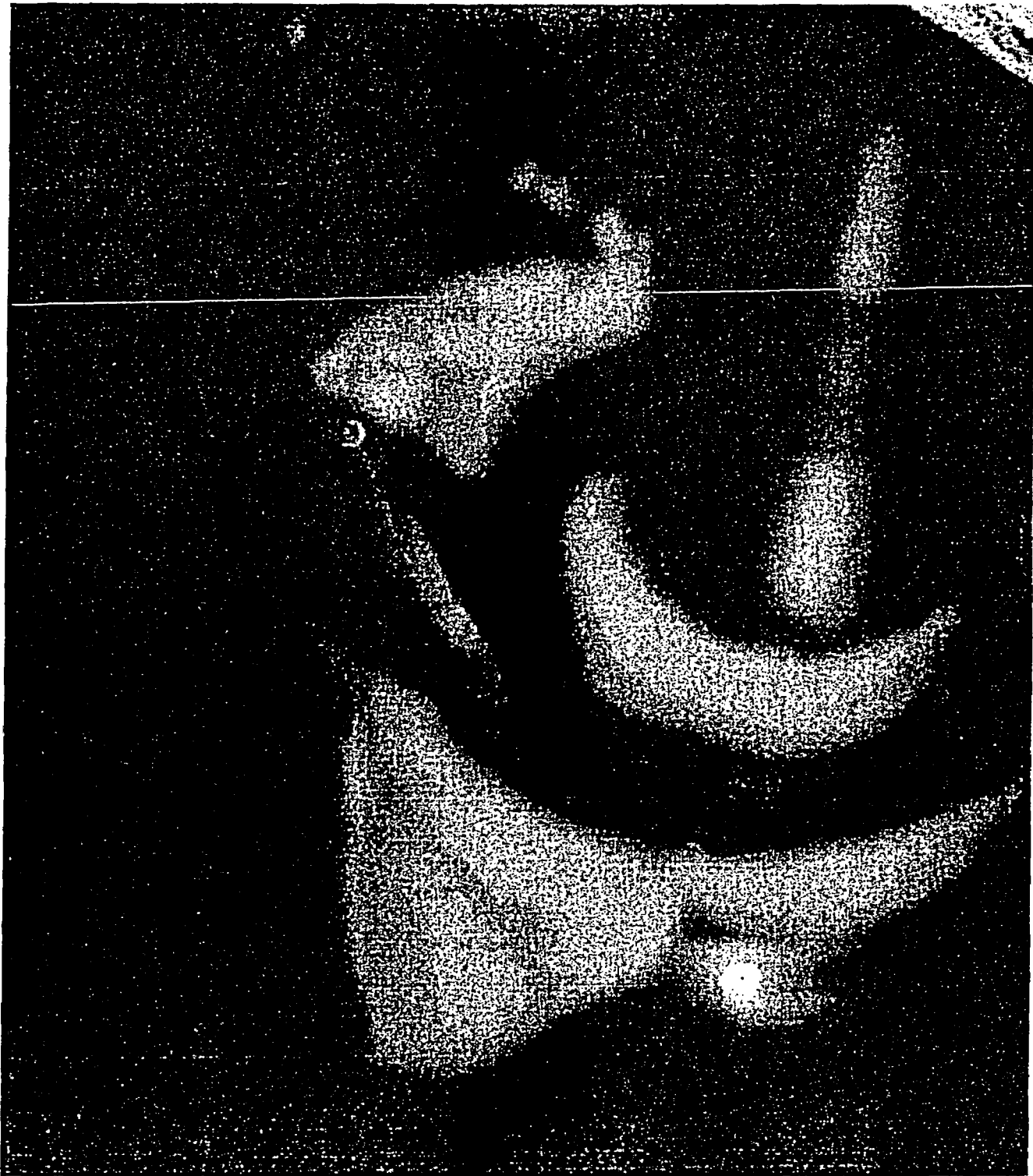


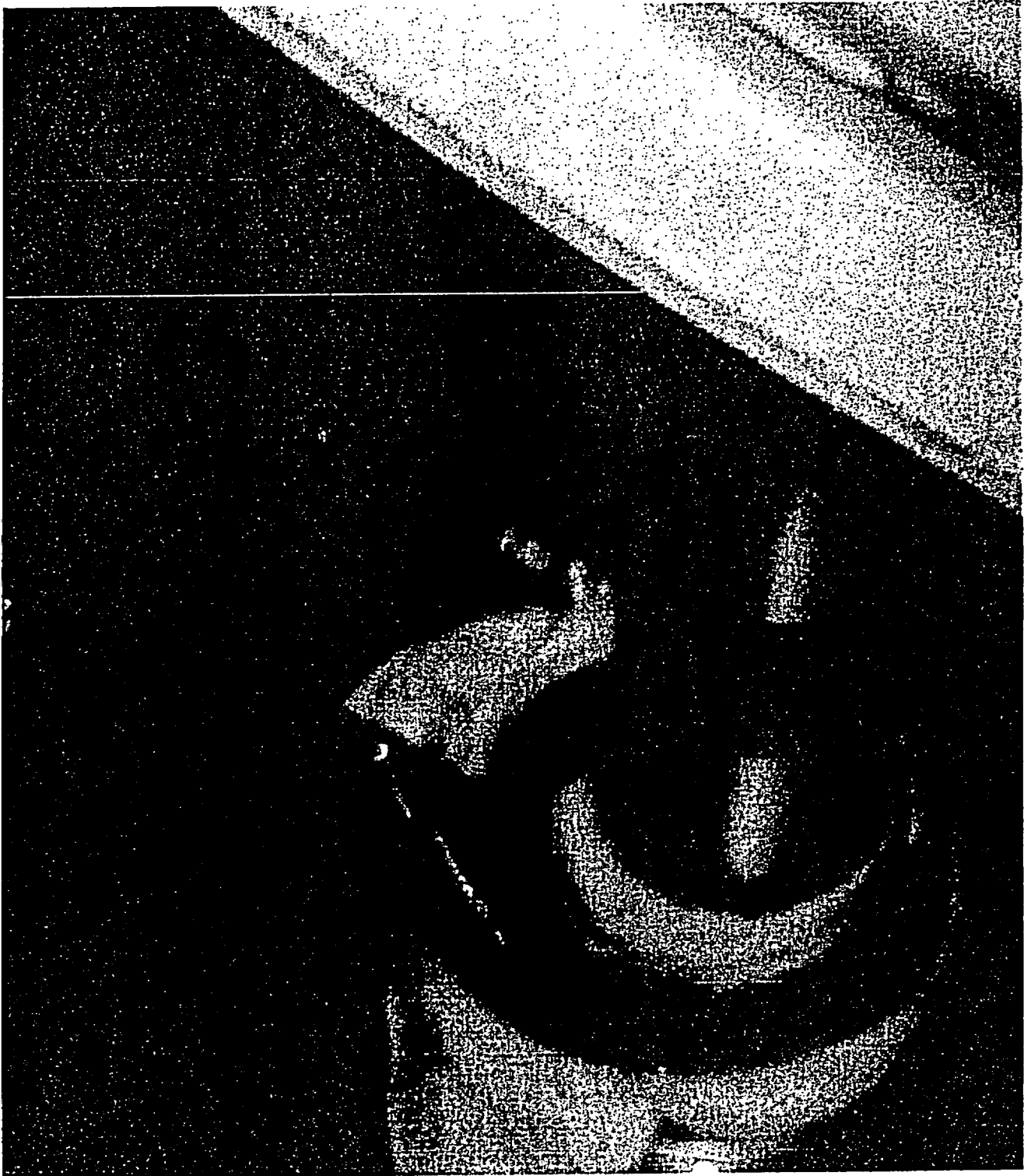


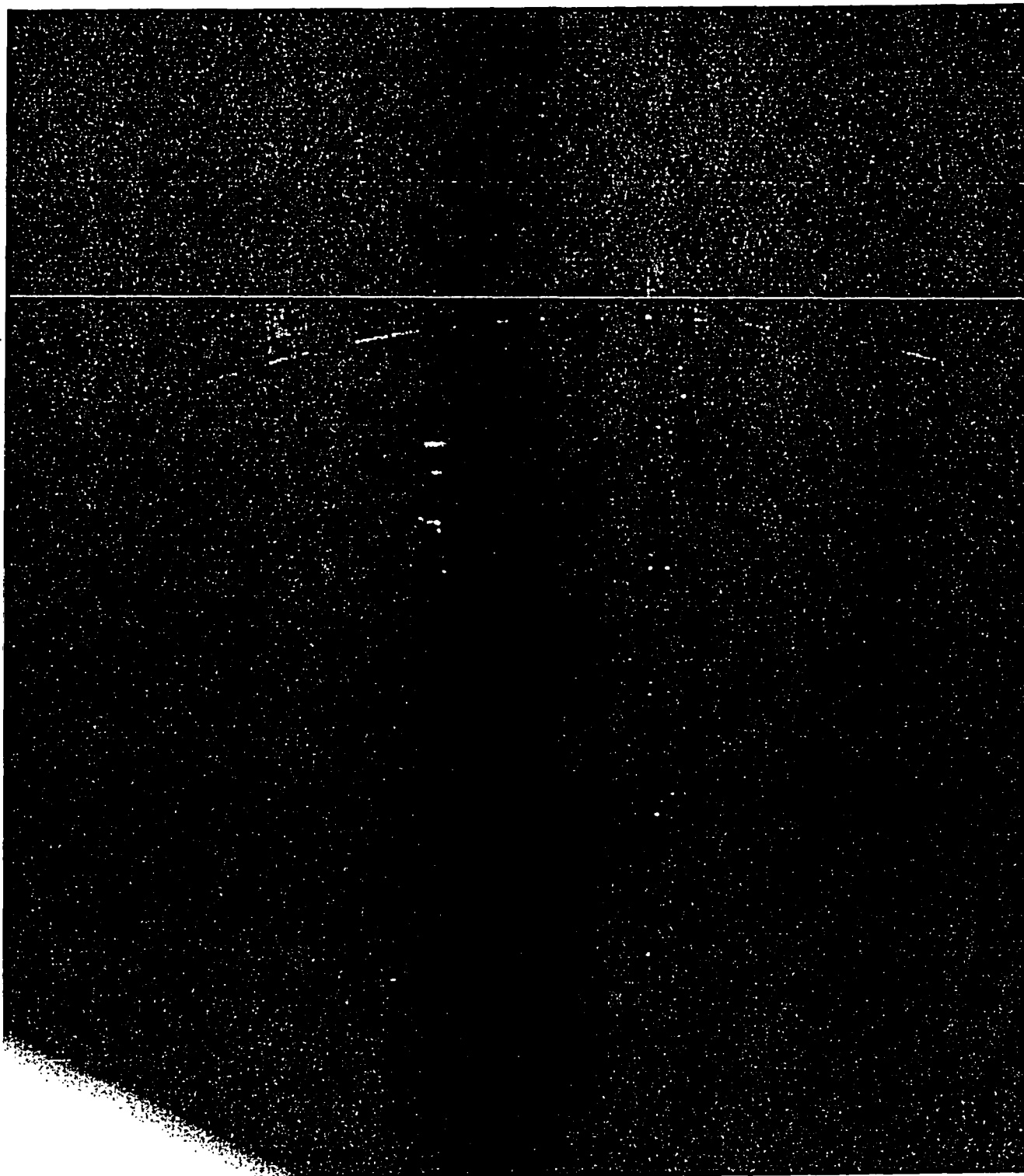












Point Beach Nuclear Plant  
APPROVAL FOR HARD HAT EXEMPTION

EXEMPTION ANALYSIS INFORMATION

Date: 4/22/04

Supervisor Requesting Exemption: (Print) Brittingham R.

LOCATION TO BE EXEMPT

Facility: 66' person basket / crane operator / spotter

Description: Bullet Wain

WO Number/Procedure for which this exemption applies: 0407919

Additional Information: \_\_\_\_\_

JOB SAFETY ASSESSMENT

Activity: install bullet wain

Justification for the exemption: face shield, harness

Compensatory Measures: None / No one else work

Supervisor Signature: RJA

Exemption Expiration Date: 4/22/04

The original copy of this form shall be returned to Industrial Health and Safety. A copy of this exemption shall be hung at the location of the activity.

## **Process for Commencing Scheduled Outage Work Activities on Unit 1 and Common Systems (Revision 2 - 4/11/04)**

**Note:** Information in this document does not supercede any station procedural requirements.

Priority and sequence of work activities shall be in accordance with the following:

**First Priority** – Increase RCS Inventory and Exit Shutdown Safety Assessment Yellow Conditions on Core Cooling and Inventory

Scheduled activities required to raise RCS inventory. These activities include but are not limited to those scheduled to support reactor vessel head lift and reactor cavity flood up.

**Second Priority** – Focused Specialty Activities

Steam Generator Eddy Current and Sludge Lancing  
Main Turbine and Generator Work  
Reactor Vessel Head Inspection  
Heat Exchanger Hydro-Lancing and Eddy Current

**Third Priority** – Remaining Scheduled Work

Upon Plant Manager approval for commencement of scheduled outage work, the following process will be followed:

- Work activities are selected based on established priority and sequence.
- Primary work group responsible for a selected activity completes a "Unit 1 R28 Recovery and Restart Checklist."
- Outage Control Center validates that the selected activity is appropriately sequenced.
- Operations Outage Coordinator validates that plant conditions will support completion of the selected activity.
- Safety Assessment confirms that the selected activity will not adversely affect the planned Shutdown Safety Assessment.
- The selected activity job supervisor/contract liaison completes the Senior Management Interview with a designated Senior Management Representative.

- The Shift Outage Manager reviews the completed "Unit 1 R28 Recovery and Restart Checklist," resolves any discrepancies and then approves the selected activity for release when the job supervisor/contract liaison communicates to the Shift Outage Manager that the activity is ready to proceed safely, all communications lines are established and functioning, and the single point of contact for the activity is identified.
- The selected activity job supervisor/contract liaison conducts pre-job briefing with all personnel involved in the selected activity using information obtained from the associated "Unit 1 R28 Recovery and Restart Checklist."
- Operations Work Control Center Shift Manager releases the activity to the affected work group for completion.

"Supervisor" is defined as any person designated to direct any of the approved selected activities and includes contract liaisons and contract supervisory personnel.

### **Conduct of Business for Scheduled Outage Work Activities on Unit 1 and Common Systems that Carry Over More than One Shift**

It is imperative that we maintain our process on those activities that carry over across shift change. As such, we must ensure the following sequence-critical concepts are preserved:

1. Activities shall have safe condition hold points pre-defined (i.e. formally in the work document, informally in the pre-job brief, etc).
2. All contract liaisons/supervisors must receive their activity specific senior management interview prior to supervising the selected activity.
3. Personnel assigned to complete an activity must receive a pre-job brief prior to commencing work on the selected activity.

For activities with performance durations that are greater than one shift, the following steps shall be completed in the sequence prescribed below to support scheduled turnover:

1. The associated activity will be placed in a safe condition at one of the pre-defined hold points.
2. The contract liaison(s)/supervisor(s) receive(s) their activity specific senior management interview.
3. The associated contract liaison(s)/supervisor(s) conducts pre-job briefing with all personnel involved in the selected activity using information obtained from the associated "Unit 1 R28 Recovery and Restart Checklist."
4. The activity may then commence.

If it is determined that the nature of a work activity will require work to be performed during scheduled shift turnover, the following additional actions will be pre-identified and coordinated (i.e. supervision and craft brought in early) to support turnover on station:

1. The contract liaison(s)/supervisor(s) receive(s) their activity specific senior management interview.
2. The associated contract liaison(s)/supervisor(s) conducts pre-job briefing with all personnel involved in the selected activity using information obtained from the associated "Unit 1 R28 Recovery and Restart Checklist."

  
Jim Shaw

POINT BEACH NUCLEAR PLANT  
UNIT 1 R28 RECOVERY AND RESTART CHECKLIST  
(Unit 1 and Common Scheduled Activities)

Work Order or Activity Number: 0407919 Boiler NOSE Assembly  
OPIT Scheduling Representative: Steve Theriault

**LOOK AHEAD CHECKLIST:**

		Completed on	Initial
Work Package In Progress (Started but not complete)	<u>(Yes)</u> /No Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>
Work Package/Procedure Reviewed	<u>(Yes)</u> Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>
Work Package/Procedure Revision Needed to Restart	Yes/ <u>(No)</u> /NA Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>
Work Package/Procedure Revision Completed	Yes/No/ <u>(NA)</u> Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>
Work Package/Procedure Reviewed for Error Traps	<u>(Yes)</u> Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>
Contractor Liaison Assigned	Yes/ <u>(NA)</u> Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>
Documentation/Logging/Notification Requirements Identified for Pre-Job Brief	<u>(Yes)</u> Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>
Pre-Job Brief Prepared for Starting/Restarting Evolution	<u>(Yes)</u> Date: <u>4-22-04</u>	<u>4-22-04</u>	<u>cl</u>

Remarks (At a minimum, explain any "No" answers, list contact name for contractor liaison and describe oversight plan.)

NO Procedure Revision NEEDED cl 4-22-04



**WORK TRANSITION/NOTIFICATION/TURNOVER:**

**Work Groups Involved:**

Mech. Maint. ☒ Yes ☐ No Contact: C RIDINGS I&C Maint. Yes ☒ No Contact: N/A  
Elect. Maint. ☒ Yes ☐ No Contact: C WILKINSON Chemistry Yes ☒ No Contact: N/A  
Operations ☒ Yes ☐ No Contact: W. LOCK Security Yes ☒ No Contact: N/A  
Engineering ☒ Yes ☐ No Contact: KENOTI Nuclear Oversight Yes ☒ No Contact: N/A  
Construction Yes ☒ No Contact: N/A Training Yes ☒ No Contact: N/A  
Rad Protection ☒ Yes ☐ No Contact: CALBERT Others: Yes ☒ No Contact: N/A

**WORK GROUP HANDOFF FLOWPATH:**

Start OPS > RP > Maint > OPS >  
\_\_\_\_\_ > \_\_\_\_\_ > \_\_\_\_\_ > Complete

Completed By:

C H RIDINGS 1 0 7 4-22-04  
Print Name Signature Date

Schedule Validated (OCC)

Dave Schutte Dave Schutte 4-22-04  
Print Name Signature Date

Plant Conditions Evaluated  
for Restarting Work  
(Ops Outage Coordinator)

Tom Barot Tom Barot 4/22/04  
Print Name Signature Date

Safety Assessment Review

Mike LeGrever Mike LeGrever 4/22/04  
Print Name Signature Date

**RESPONSIBLE SUPERVISOR / TURNOVER INTERVIEW**

Senior Management Interview  
Complete

JIM BRANDER      1 [Signature]      4/22/04  
Print Name      Signature      Date

Responsible Supervisor

CH RIDINGS      1 [Signature]      4/22/04  
Print Name      Signature      Date

Shift Outage Manager Review

JIM BRANDER      1 [Signature]      4/22/04  
Print Name      Signature      Date

Comments: \_\_\_\_\_

Completed forms should be retained in the OCC

**RESPONSIBLE SUPERVISOR / TURNOVER INTERVIEW**

Senior Management Interview  
Complete

JIM BRANDER      1 [Signature]      4/22/04  
Print Name      Signature      Date

Responsible Supervisor

BRIFFINGHAM R.      1 [Signature]      4/22/04  
Print Name      Signature      Date

Shift Outage Manager Review

JIM BRANDER      1 [Signature]      4/22/04  
Print Name      Signature      Date

Comments: \_\_\_\_\_

Completed forms should be retained in the OCC

NOTE: Document additional supervisor interviews (if different from above) on additional sheets as necessary.

# Special Pre-Job Brief Addendum

## Key Error Traps

(√)

- **First time evolution**

*There is no such thing as a routine evolution. It is experience with the task and over-familiarity that are just as dangerous as being the first time evolution. STOP – THINK – ACT – REVIEW*

- **Distractive or poor environment**

*Work has been interrupted for over a day now. Employees are tired of being idle. It is time to focus our attention on our task*

1. *Is your workstation the same as you left it?*
2. *What has changed?*
3. *Will any changes affect my task?*

- **Inadequate mental/physical state**

1. *Ask yourself: "Are you truly ready."*
2. *Stop if you are unsure*
3. *As a result of the interruption, your mental and physical state have been removed from your task. Prepare yourself for re-entry into the work environment by ensuring you understand your role and the activity you are to perform.*

- **Time pressure**

*If you are feeling time pressure, this is a precursor that the task is being driven by outside factors. It promotes shortcuts and forces you into knowledge-based performance. Raise the concern to supervision and work out a resolution.*

- **Imprecise communication**

1. *Make sure the sender has the receiver's attention (the 1<sup>st</sup> leg of 3-way)*
2. *Make sure the receiver has received the message (the 2<sup>nd</sup> leg of 3-way)*
3. *Acknowledge receipt of repeat back (the 3<sup>rd</sup> leg of 3-way)*
4. *Wait until the communication is finished before moving on. When rushed, people will tend to cut communications shorter than normal or go off running prior to communication closure.*

- **Other error likely tasks**

1. *Making assumptions*
2. *Not knowing who the "they" are. Ask if you don't know who the "they" person is.*
3. *Not applying ACEMAN*
  - a. *Accident free*
  - b. *Control dose*
  - c. *Event free*
  - d. *Meet the schedule*
  - e. *Attend training*
  - f. *No rework*
4. *Loss of a barrier to excellence*
  - a. *Non-qualified workers*
  - b. *Lack of job planning and preparation*
  - c. *No verification and validation*
  - d. *Inadequate supervisory oversight*
  - e. *Poor worker practices*

Point Beach Nuclear Plant  
High Risk Work Pre-Job Briefing Checklist

WO / PROCEDURE # 0407919	EQUIPMENT I.D. # 1R-1	DATE: 4-22-04
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**ATTENDEES**

☐ BRIEFING REQUIRED DAILY IF CHECKED

SUPERVISOR: C. Bidings	Brittingham	
JOB LEADER: Duest	N. Johnson	
SEE Attached Sheet	See attached	
		Continue on reverse side

**REVIEW / DISCUSS & CHECK OFF all Applicable Items**

<p style="text-align: center;"><b><u>Work Order</u></b></p> <p>(√)</p> <ul style="list-style-type: none"> <li>Proper Authorization to Begin Work</li> <li>Current Revision Section is Signed on Procedures &amp; Drawings</li> <li>Cover Sheet</li> <li>Text Detail Sheet</li> <li>Work Plan</li> <li>Hold Points</li> <li>Self Checking</li> <li>Independent Verification and Concurrent Checks</li> <li>Post Maintenance Testing</li> </ul> <p style="text-align: right; margin-right: 50px;"><i>RWP 04-182</i></p>	<p style="text-align: center;"><b><u>Safety</u></b></p> <p>(√)</p> <ul style="list-style-type: none"> <li>Personnel / PPE</li> <li>Nuclear / Potential Impact on Plant</li> <li>Equipment</li> <li>Check Electrical Equipment to be De-energized, or Use Energized Electrical Safety Checklist PBF-9044</li> <li>High Energy Safety Requirements</li> <li>Potential Trip-Sensitive Equipment in Area (consider posting or barricading)</li> <li>Working Conditions</li> <li>Post Area for Hazards as Needed</li> <li>Chemical Contaminant and Control Requirements CHES Sheet in Work Package</li> </ul>
<p style="text-align: center;"><b><u>Danger Tagging</u></b></p> <p>(√)</p> <ul style="list-style-type: none"> <li>Protected Worker Log</li> <li>Boundaries</li> <li>Walkdown</li> <li>Notes &amp; Cautions</li> </ul>	<p style="text-align: center;"><b><u>Radiation Precautions</u></b></p> <p>(√)</p> <ul style="list-style-type: none"> <li>ALARA</li> <li>RWP</li> <li>Radwaste Considerations</li> </ul>

<p style="text-align: center;"><b><u>Permits</u></b></p> <p>(√)</p> <table style="width: 100%;"> <tr> <td style="width: 70%;">• Ignition Control</td> <td>PBF-0068</td> </tr> <tr> <td>• Transient Combustibles</td> <td>PBF-1911a</td> </tr> <tr> <td>• Scaffold Final Inspection Checklist</td> <td>PBF-9114</td> </tr> <tr> <td>• Confined Space</td> <td>PBF-0038</td> </tr> <tr> <td>• Fire Barrier Penetration</td> <td>PBF-0034</td> </tr> <tr> <td>• Person Lift Utilizing Working Platform and Overhead Crane</td> <td>PBF-9108</td> </tr> </table>	• Ignition Control	PBF-0068	• Transient Combustibles	PBF-1911a	• Scaffold Final Inspection Checklist	PBF-9114	• Confined Space	PBF-0038	• Fire Barrier Penetration	PBF-0034	• Person Lift Utilizing Working Platform and Overhead Crane	PBF-9108	<p style="text-align: center;"><b><u>Other</u></b></p> <p>(√)</p> <ul style="list-style-type: none"> <li>Review Concrete Drilling/Core Bore Precautions when authorized to cut rebar in concrete. PBF-9219</li> <li>Foreign Material Exclusion</li> <li>Housekeeping</li> <li>Review OE Included in Work Package</li> <li>Individual Responsibilities &amp; Qualifications</li> <li>Lessons Learned</li> <li>Communications Requirements</li> <li>Security Notification</li> <li>Control Room / Watchstander Notification</li> <li>Equipment and Plant Responses to be Expected While Performing Work</li> <li>Special Tools / Instruments</li> <li>Pre-Fab Complete</li> <li>Post-Job Debrief</li> <li>Address Concerns/Questions - Specify</li> </ul> <p style="text-align: right; margin-right: 50px;">PBF-9218</p>
• Ignition Control	PBF-0068												
• Transient Combustibles	PBF-1911a												
• Scaffold Final Inspection Checklist	PBF-9114												
• Confined Space	PBF-0038												
• Fire Barrier Penetration	PBF-0034												
• Person Lift Utilizing Working Platform and Overhead Crane	PBF-9108												

**STOP - THINK - ACT - REVIEW**

### REVIEW/DISCUSS & CHECK OFF all Items

<div><div>✓</div><div><u>Significant Steps</u></div><div>(✓)</div><ul style="list-style-type: none"><li>While reviewing work package with the craft, identify the critical steps in the job. What must go right to be successful?</li><li>With craft input, determine which steps require "Double Check" (inspection by another qualified individual). Mark those steps with the Double Check (✓✓) stamp as necessary.</li></ul></div>	<div><div>✓</div><div><u>Performance/Error Modes</u></div><div>(✓)</div><ul style="list-style-type: none"><li>For the critical steps determined on the left, and using the Performance Mode Definitions on the next page of this form, determine what performance mode people will be in when they perform those steps.</li><li>Discuss with the craft for each critical step the common error mode and preventive techniques associated with the performance mode used in those steps. See Error Mode Chart on the next page of this form for error modes and preventive techniques.</li></ul></div>
<div><div>✓</div><div><u>Error Likely Situations</u></div><div>(✓)</div><ul style="list-style-type: none"><li>Using the Common Precursors to Human Error Chart on the next page, review the job with the craft and determine if any exist for this job.</li><li>Discuss and implement with craft ways to counter them.</li></ul></div>	<div><div>✓</div><div><u>Assumptions</u></div><div>(✓)</div><ul style="list-style-type: none"><li>If anyone in the brief makes the statement: "I think" or "I believe," challenge their assumptions before their inaccurate mental model creates a problem on the job.</li><li>Use Qualification, Validation, and Verification (QV&amp;V) to eliminate assumptions.</li></ul></div>
<div><div>✓</div><div><u>Key Defense Analysis</u></div><div>(✓)</div><ul style="list-style-type: none"><li>What are the defenses important for the job's success?</li><li>What are the barriers for the most likely errors and what are the worst case consequences if they fail?</li><li>What defenses are missing or flawed? Correct as necessary.</li></ul></div>	<div><div><u>Mitigating Actions Used</u></div><div></div></div>

## PERFORMANCE MODE DEFINITIONS

**Skill-Based Mode** – Highly practiced actions, routine activity, usually executed from memory without conscious thought in a thoroughly familiar environment. An example is “skill of the craft actions.”

**Rule-Based Mode** – Behavior based upon stored rules based on one’s recognition of the problem situation. An example is following the instructions of a work plan or procedure.

**Knowledge-Based Mode** – Developing a method of coping with an unfamiliar situation using mental representation of the situation based on one’s knowledge of the system, scientific principles, and fundamental theory. An example is troubleshooting an unknown problem in a component where there are no specific guidelines to follow.

## ERROR MODE CHART

<u>Performance Mode</u>	<u>Error Mode</u>	<u>Preventive Techniques</u>
Skill-Based	Inattention	Self-Checking Peer Check
Rule-Based	Misinterpretation	Qualify, Validate, and Verify (QV&V) Peer Check
Knowledge-Based	Inaccurate Mental Model	Timeout, Stop, and Collaborate

## COMMON PRECURSORS TO HUMAN ERROR CHART

<b>Task Demands</b> High workload Time pressure Simultaneous, multiple tasks Repetitive actions Irreversible actions Interpretation requirement Unclear goals, roles, or responsibilities Lack of or unclear standards	<b>Individual Capabilities</b> Unfamiliarity with task Lack of knowledge New technique, not used before Imprecise communications habits Lack of proficiency/inexperience Unsystematic problem-solving skills “Can do” attitude for safety-critical task Illness/fatigue
<b>Work Environment</b> Distractions/interruptions Changes/departure from routine Confusing procedure/vague guidance Confusing displays/controls Workarounds? OOS instrumentation Hidden system response Unexpected equipment conditions Lack of alternate indication	<b>Human Nature</b> Stress Habit patterns Assumptions Complacency/overconfidence Mind set (intentions) Inaccurate risk perception Mental shortcuts (biases) Limited short-term memory

Point Beach Nuclear Plant  
**PRE-JOB BRIEF CHECKLIST**

JOB/EVOLUTION: 1R-1 cono-seal	AREAS/WO# 0407919	DATE: 4-21-01
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ATTENDEES

☐ BRIEFING REQUIRED DAILY IF CHECKED

Conducted By: <i>C. D. Jones</i>		
<i>DeCost</i>		
<i>Wiegman</i>		
<i>Zippert</i>		
		<i>Use back of sheet if necessary</i>

REVIEW / DISCUSS & CHECK OFF all Applicable Items

<p style="text-align: center;"><u>Scope of Job</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Purpose, leader, resources, tools, parts</li> <li>Procedures, work orders, drawings, permits</li> <li>Maintenance Rule Status of the affected system</li> </ul>	<p style="text-align: center;"><u>Hazards</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Personnel safety/PPE</li> <li>Plant operation, power generation, nuclear safety, trip avoidance</li> <li>Equipment</li> <li>Asbestos</li> <li>Lead paint</li> </ul>
<p style="text-align: center;"><u>Energy Sources</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Tag boundaries</li> <li>Energized equipment, de-energized equipment, pressurized, de-pressurized</li> <li>Protected Worker Log</li> </ul>	<p style="text-align: center;"><u>Radiological Conditions</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>ALARA</li> <li>RWP</li> <li>Radwaste Considerations</li> </ul>
<p style="text-align: center;"><u>Communications</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Communication requirements</li> <li>Necessary notifications</li> <li>Individual job requirements are understood</li> <li>Radio Frequency Interference (RFI) areas (e.g., Control Room)</li> </ul>	<p style="text-align: center;"><u>Other</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Logistics support requirements</li> <li>Foreign Material Exclusion</li> <li>Housekeeping</li> <li>Security notification</li> <li>PBNP/Industry event Lessons learned</li> </ul>
<p style="text-align: center;"><u>Special Precautions</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Industry and in-house operating experience, as applicable</li> <li>Error-likely-situations, as applicable</li> <li>Defenses-barriers</li> <li>Independent verifications and concurrent checks</li> <li>Termination criteria-recovery, as applicable</li> <li>Protected equipment in the area</li> </ul>	<p style="text-align: center;"><u>Key Error Traps</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>First time evolution</li> <li>Distractive or poor environment</li> <li>Inadequate mental/physical state</li> <li>Time pressure</li> <li>Imprecise communication</li> <li>Other error likely tasks</li> </ul>
<p style="text-align: center;"><u>Key Barriers</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Job briefings</li> <li>Procedure use</li> <li>Administrative program use</li> <li>Turnover meetings</li> <li>Supervisory presence</li> <li>Review verification</li> <li>Co-worker coaching</li> <li>Self improvement</li> </ul>	<p style="text-align: center;"><u>Critical Steps</u></p> <p>(✓)</p> <ul style="list-style-type: none"> <li>Critical steps identified for the work activity</li> <li>Error likely situations at each critical step</li> <li>Possible consequences of errors at each critical step</li> <li>Defenses or contingencies for each critical step, including use of the appropriate human error reduction tools</li> </ul>

	<b>DOCUMENTATION OF INFORMATION SHARING</b>
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See reverse side for instructions on completion of this form.

GROUP: Maint DATE: 4-22-04

**TITLE:**

Description:

Bullet nose Recovery

INFORMATION SHARING MODE:

☐  
☐  
☐  
☐


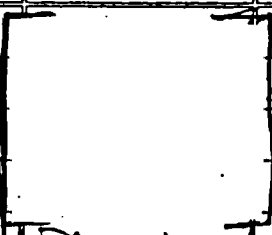
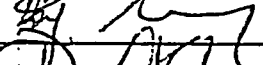
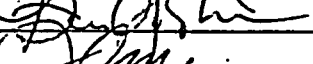

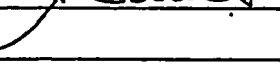
Required Reading

Discussion

Informational Message / Bulletin

Other

PERSONNEL BRIEFED (attach additional pages if needed):

Print Name	Signature	ID Number	Req. Reading Date
Joseph A. Lancaster			
MJ GRAY			
Daniel T. Shannon			
Jeff MARR			
Jeff Brunt			

Ex.  
6

Consider for follow-up training? ☐ Yes ☒ No

Briefing Completed by:  Date: 4/22/04  
Signature

Group Supervisor/Manager:  Date: 4/22/04  
Signature

Retention: Per Site Document Control Process  
Retain in: Training Records





# DOCUMENTATION OF INFORMATION SHARING

See reverse side for instructions on completion of this form.

GROUP: manut

DATE: 4-22-04

## TITLE:

Description:

Bullet NOSE Recovery

INFORMATION SHARING MODE:

☐  
☐  
☐  
☐

Required Reading

Discussion

Informational Message / Bulletin

Other

PERSONNEL BRIEFED (attach additional pages if needed):

Print Name	Signature	ID Number	Req. Reading Date
CH RINGS			
S. WIEGAND			
L. Ziegler			
Duane Ducat			
Kevin J. Kersch			
Tina Peltier			
David Sieloff			
DON HARRISON			
MARK, E. MISLINSKI			
MARK PERLEWITZ			
Joe Krentz			
Steve Bricker			

Consider for follow-up training?

☐ Yes

☐ No

Briefing Completed by:

Signature

Date: 4/22/04

Group Supervisor/Manager:

Signature

Date: 4/22/04

Retention: Per Site Document Control Process  
Retain in: Training Records

Nuclear Power Business Unit

ATTENDANCE REPORT

Date: 4/22/2004	Title: Ceno-seal Bullet inst.	
Attendee's Name (Last, First, MI) Please Print	Attendee's Signature	Attendee Identification Number
Walsh, Russ E	Russ Walsh	
Flores, Dave	Dave Flores	
STUART, NICHOLAS C	Nicholas Stuart	
MUSCARELLA, JAMES E	James E Muscarella	
Jandrey, Dale L	Dale Jandrey	
Kennedy, James Dale	James Dale Kennedy	
MAKI, Jeffrey R.	Jeffrey Maki	
Alexander, Ryan D	Ryan Alexander	
CHRIST, DAVID S	David Christ	
Johnson, Neil T	Neil Johnson	
Schles, Allen F	Allen F Schles	
Peroutka, JoAnn M	JoAnn Peroutka	
Mecca, Charlotte M	Charlotte Mecca	
Vignati, DAN L	Dan Vignati	
Lawrence, Gary T	Gary Lawrence	
Ruff, Alan T	Alan Ruff	
Livorno, Brent C	Brent Livorno	
SCHAEFER, SCOTT M	Scott M Schaefer	
Halbak, Brian J	Brian Halbak	
Kenneth, Mike	Mike Kenneth	
Cardova, Kenneth B	Kenneth B Cardova	
HOLZMAN, MIKE	Mike Holzman	
BUTTERBRAD, DAVID	David Butterbrad	
Sin, Eric	Eric Sin	
Jim McCarty	Jim McCarty	
Bill Hennings	Bill Hennings	
Bank, Brenda J	Brenda Bank	
Riley, Schreiner Y	Y Schreiner Riley	
Sipiorski, Mary C	Mary Sipiorski	
GREEN, JAMES G	James Green	
Wingard, La	La Wingard	
Peterson, Larry J.	Larry Peterson	
Management Signature:		

Exb