

**Originator:** Manderino, Peter**Originator Phone:** 8044**Originator Group:** Eng P&C Components Mgmt**Operability Required:** Y**Supervisor Name:** Veglia, Vincenzo P**Reportability Required:** Y**Discovered Date:** 04/25/2003 08:32**Initiated Date:** 04/25/2003 09:58**Condition Description:**

Primary Containment Isolation Valve (PCIV) 6-CK-62B failed to meet its individual valve Local Leak Rate Test (LLRT) acceptance criteria of less than or equal to 7.89 SLM. Since LLRT was acceptable on the inboard PCIV (6-CK-58B) the actual penetration leakage was small and does not exceed overall Primary Containment Containment allowable leakage.

**Immediate Action Description:**

Perform maintenance IAW P9900818 to achieve acceptable post maintenance LLRT results.

**Suggested Action Description:****EQUIPMENT:**Tag NameTag Suffix Name Component Code Process System Code

CK

06

**TRENDING (For Reference Purposes Only):**Trend TypeTrend Code

PI=SI

CRT=EF

**Initiated Date:** 4/25/2003 9:58**Owner Group :**Eng P&C Components Mgmt**Current Contact:** R. HUNNEFELD+**Current Significance:** B - EFA (DCA)**Closed by:** McWilliams,Dorena C

10/14/2003 7:07

**Summary Description:****Remarks Description:****Closure Description:**

All CA's associated with this CR were reviewed by the responsible manager. Upon the manager's recommendation, this CR is being closed.

Per ENN-LI-102, Para. 5.8.2.3: Independent reviews are not required for non-significant condition reports. The documented closeout verification performed by the Responsible Management is adequate authorization for closure of the CR

**OperabilityVersion:** 1**Operability Code:** EQUIPMENT INOPERABLE**Immediate Report Code:** NOT REPORTABLE**Performed By:** Noyes,David E

04/25/2003 17:40

**Approved By:** Noyes,David E

04/25/2003 17:41

**Operability Description:**

Individual outboard valve is inoperable. Overall penetration remains operable due to performance of inboard valve.

**Approval Comments:**

**Version:** 1

**Significance Code:** B - EFA (DCA)

**Classification Code:** NON-SIGNIFICANT

**Owner Group:** Eng P&C Components Mgmt

**Performed By:** Buckley,Patricia A

04/26/2003 10:27

**Assignment Description:**

Responsible Manager: T. White

[4/29/03; T. WHITE] Changed owner to T. Fox.

**Reportability Version:** 1

**Report Number:**

**Report Code:** NOT REPORTABLE (1)

**Boilerplate Code:** NOT REPORTABLE

**Performed By :** Ellis,Douglas W

04/27/2003 06:02

**Reportability Description:**

Not reportable - This event does not meet the screening criteria of WI 3.06-01.

**CA Number:** 1

	<b>Group</b>	<b>Name</b>
<b>Assigned By:</b>	Engineering Director	Bethay, Stephen J
<b>Assigned To:</b>	Eng P&C Components Mgmt	Fox, Thomas M
<b>Subassigned To :</b>	Eng P&C Plant Programs Staff	Carroll, William G
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<b>Originated By:</b>	Buckley, Patricia A	4/26/2003 10:29:39
<b>Performed By:</b>	Veglia, Vincenzo P	5/23/2003 16:17:14
<b>Subperformed By:</b>	Carroll, William G	5/23/2003 16:11:46
<b>Approved By:</b>		
<b>Closed By:</b>	Veglia, Vincenzo P	5/23/2003 16:17:49

**Current Due Date:** 05/26/2003

**Initial Due Date:** 05/26/2003

**CA Type:** DISPOSITION - EFA

**Plant Constraint:** NONE

**CA Description:**

Please provide an Equipment Failure Analysis/Direct Cause and develop a corrective action plan using the guidance provided in LI-102.

**Response:**

See sub-response.

**Subresponse :**

See attached Equipment Failure Analysis.

**Closure Comments:**

The response to this CA has been reviewed and found acceptable for closure of the CA.

**Attachments:**

- Subresp Description
- 6CK-62B Equipment Failure Analysis

# Attachment Header

**Document Name:**

CR-PNP-2003-01582 CA-00001

**Document Location**

Subresp Description

**Attach Title:**

6CK-62B Equipment Failure Analysis

## **EQUIPMENT FAILURE ANALYSIS**

CONDITION REPORT No. '03-1582

1. Problem Description: Primary Containment Isolation Valve (PCIV) 6-CK-62B failed the Appendix J "as-found local leak rate test.
2. Direct Cause: Inspection of the valve internals revealed worn hinge pins and bushings which resulted in misalignment of the disc in relation to the valve body seating surface. As-found condition: Disc off center to left, Disc metal to metal with seat @ ~2 o'clock (not touching anywhere that could be measured—top half of disc), Disc was loose on hinge pins and could be moved side to side, When dropped disc did not self-center side to side—disc stayed to left with metal to metal contact, Disc was .015" low measured at 12 o'clock position. Soft seat elastomer appeared to have eroded over the cycle resulting in less than full contact around the valve seating surface. Prior to RFO-13 an industry search was done to evaluate the elastomer seating material looking at the material PNPS uses vs. industry peers. There were no suitable material replacements found.
3. Contributing Causes: none
4. Maintenance Rule Failure: YES
5. Extent of Problem: 4 possible check valves—6-CK-62 A/B and 6-CK-58A/B. Disassembly of 62 "A" showed wear in hinge pin bushings similar to, but not as severe to 62"B" The hinge pins on 62 B showed more signs of wear than 62A. Disassembly of 58's showed internals to be in good shape—hinge pins and bushings were replaced during RFO-13. Soft seat material was found to be good in 58 A and B. The soft seats had been installed in 58 A/B during RFO -13. The soft seats had been installed in 62 A/B during RFO-12.
6. Corrective Actions Completed (include Dates if possible) 6-CK-62"B" rebuilt per P9900820 (4/30/03). Passed PWT LLRT. Initiated WRT for RFO-15 to "map" valve journals both for alignment and concentricity combined with replacement of soft seats. Findings will be used to determine if valve body requires machining to improve hinge pin alignment.

Cause: worn hinge pins—replaced 4/30/03

Cause: worn hinge pin bushings—replaced 4/30/03

Cause: "eroded" soft seats—replaced 4/30/03

Potential Cause: worn body journals (diameters egg-shaped or alignment skewed) WRT written to Add to RFO-15 scope during rebuild of 6-CK-62 A/B (WRT #080873)

## **EQUIPMENT FAILURE ANALYSIS**

7) Corrective Actions Required (if not required, state "N/R") N/R

Action Required/New CA Number:

(add additional actions as needed)

8) Corrective Actions required to eliminate and/or reduce the likelihood of recurrence of identified cause(s) and contributing cause(s).

Corrective Action #3) Evaluate use of stellite or other hard surfacing of hinge pins to reduce Propensity to wear.

(NOTE: Address each cause and contributing cause. If corrective actions are not proposed, for each cause and contributing cause, provide a basis for why no corrective action is necessary.)

Action Required/New CA Number: C/A #3) Evaluate use of stellite or other hard surfacing of hinge pins to reduce propensity to wear. Initiate ER for PDC if suitable replacement is found.

(add additional actions as needed)

CA Number: 2

Group	Name
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Assigned By: CRG Mgmt

Assigned To: Maint Mechanical Mgmt

Sholler,Robert B

Subassigned To :

Originated By: Buckley,Patricia A

4/26/2003 10:33:13

Performed By: Mulligan,Kevin J

5/4/2003 08:50:44

Subperformed By:

Approved By:

Closed By: Mulligan,Kevin J

5/4/2003 08:50:44

Current Due Date: 05/05/2003

Initial Due Date: 05/05/2003

CA Type: CORRECTIVE ACTION

Plant Constraint: RFO14D- DRN DWN VSSL

**CA Description:**

Primary Containment Isolation Valve (PCIV) 6-CK-62B failed to meet its individual valve Local Leak Rate Test (LLRT) acceptance criteria of less than or equal to 7.89 SLM. Since LLRT was acceptable on the inboard PCIV (6-CK-58B) the actual penetration leakage was small and does not exceed overall Primary Containment Containment allowable leakage.

"As the Responsible Manager, validate the problem statement and determine corrective actions as needed to resolve the adverse condition(s). Perform repairs as needed to support acceptable PWT LLRT. Coordinate repair activities with Engineering point-of-contact. Engineering wants to be notified when valve is disassembled to capture information for an Equipment Failure Evaluation.

**Response:**

In accordance with this Corrective Action and associated Maintenance Request, the required repairs to this valve have been completed and it satisfactorily passed it's "As-Left" LLRT. Even though the Maintenance Request can not be closed out until completion of the final hot torque and in-service leak tests are completed, this Corrective Action can be closed out.

Subresponse :

Closure Comments:

CA Number: 3

Group	Name
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Assigned By: Eng P&amp;C Components Mgmt

Fox, Thomas M

Assigned To: Eng P&amp;C Plant Programs Staff

Carroll, William G

**Subassigned To :****Originated By:** Fox, Thomas M

5/22/2003 02:04:55

**Performed By:** Carroll, William G

9/30/2003 15:04:58

**Subperformed By:****Approved By:****Closed By:** Carroll, William G

9/30/2003 15:04:58

**Current Due Date:** 09/30/2003**Initial Due Date:** 09/30/2003**CA Type:** ADMIN CA**Plant Constraint:** NONE**CA Description:**

Evaluate use of stellite or other hard surfacing for hinge pins to reduce susceptibility to wear. Initiate ER for PDC if suitable replacement material is found.

**Response:**

Reviewed the specification for the existing hinge pins and evaluated hardness of material. The existing hinge pins are manufactured using 410 stainless hardened to an RC hardness of 43. This material is judged to be very hard and an ideal selection for the application. After discussing material with Vendors it is doubtful a more cost effective material exhibiting the required strength and hardness can be procured. The combination of stellite bushings with stainless hinge pins is acceptable. No additional actions are required.

**Subresponse :****Closure Comments:**

CA Number: 4

Group	Name
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Assigned By: CA&amp;A Staff

Assigned To: Eng P&amp;C Components Mgmt

Fox, Thomas M

Subassigned To :

Originated By: McWilliams, Dorena C

10/1/2003 12:15:08

Performed By: Fox, Thomas M

10/10/2003 10:38:16

Subperformed By:

Approved By:

Closed By: Fox, Thomas M

10/10/2003 10:38:16

Current Due Date: 10/15/2003

Initial Due Date: 10/15/2003

CA Type: CR CLOSURE REQUEST

Plant Constraint: NONE

**CA Description:**

Please review the closed corrective action(s) to verify adequacy and completeness to remedy the identified condition, by using the guidance in Section 5.8.1 of LI-102. If the CR is appropriate for closure, please indicate your concurrence by closure of this action. Should the closure not be satisfactory, issue a new action item to correct the deficiency.

**Response:**

Corrective actions have been completed and are sufficient to address the identified condition. No further actions are required.

Subresponse :

Closure Comments: