

Originator: Azevedo,Nelson F

Originator Phone: 7346775

Originator Site Group: IP2 P&C Eng Codes Mgmt IP2

Operability Required: Y

Supervisor Name: Burroni,Richard J

Reportability Required: Y

Discovered Date: 10/23/2008 06:04

Initiated Date: 10/23/2008 06:13

Condition Description:

Visual inspections of the underground piping exposed by the upper excavation between the CST and the Aux Feed Pump building revealed five areas where the coating had degraded. Subsequent UT inspections indicated that the piping remains at full thickness and therefore there has been no corrosion (other than minor surface corrosion) of the piping as a result of coating degradation in these five areas.

Immediate Action Description:

Discussed the results with the appropriate stakeholders.

Suggested Action Description:

Complete excavation of the lower hole, perform visual/UT inspection of the piping in the lower hole and repair any areas where the coating has degraded.

EQUIPMENT:

<u>Tag Name</u>	<u>Tag Suffix Name</u>	<u>Component Code</u>	<u>Process</u>	<u>System Code</u>
		PIPE		COND

TRENDING (For Reference Purposes Only):

<u>Trend Type</u>	<u>Trend Code</u>
REPORT WEIGHT	1
HEP FACTOR	E
EM	ESPC
INPO BINNING	ER3
KEYWORDS	KW-AGE MANAGEMENT
KEYWORDS	KW-NDE
KEYWORDS	KW-PIPE WALL
KEYWORDS	KW-MARGIN REVIEW
KEYWORDS	KW-CODES & STANDARDS
# PERIODIC REVIEW - INITIAL	05/27/09 NA as CR closed this date

CA Number: 1

	Site	Group	Name
Assigned By:	IP2	CRG/CARB/OSRC IP2	Harrison,Christine B
Assigned To:	IP2	P&C Eng Codes Mgmt IP2	Azevedo,Nelson F

Subassigned To :

Originated By: Harrison,Christine B 10/29/2008 07:22:41
Performed By: Azevedo,Nelson F 11/18/2008 09:36:34

Subperformed By:**Approved By:**

Closed By: Azevedo,Nelson F 11/18/2008 09:36:34

Current Due Date: 11/19/2008**Initial Due Date:** 11/19/2008**CA Type:** DISP - CA**Plant Constraint:** #NONE**CA Description:**

Please review and assign further corrective actions as required.

Response:

The three CST pipes (aux feed pump supply, CST return and CST overflow) were exposed at two locations for approximately 10' each. An inspection in the upper hole identified five areas which required coating repair and one area in the lower hole which required coating repair. In addition, there were several areas in the overflow pipe in the lower hole which required coating repair. These repairs have been completed and the upper hole has been backfilled. The lower hole is ready for backfilling. UT thickness measurements were also performed on those areas where the base metal was exposed and these inspections confirmed that the pipe thickness remains at nominal thickness (i.e. within the manufacturers tolerance). All of these activities have been performed under WO 164495. CA 0002 has been issued to evaluate any future inspections and its associated technical basis.

Subresponse :**Closure Comments:**

CA Number: 2

	Site	Group	Name
Assigned By:	IP2	P&C Eng Codes Mgmt IP2	Azevedo,Nelson F
Assigned To:	IP2	P&C Eng Codes Staff IP2	Lee,Robert C

Subassigned To :

Originated By: Azevedo,Nelson F 11/14/2008 14:39:29

Performed By: Azevedo,Nelson F 12/11/2008 12:11:15

Subperformed By:

Approved By:

Closed By: Azevedo,Nelson F 12/11/2008 12:11:15

Current Due Date: 12/12/2008

Initial Due Date: 12/12/2008

CA Type: ACTION

Plant Constraint: #NONE

CA Description:

Determine if additional future inspections are required for these pipes. Provide the technical basis for the decision.

Response:

Description:

Determine if additional future inspections are required for these pipes. Provide the technical basis for the decision.

Response:

Completed assessments of these lines determined these lines to be of HIGH impact (2 lines are safety related), MEDIUM corrosion risk and HIGH inspection priority. The HIGH inspection priority results from the safety function performed by Lines 1505 and 1509. The pipe material, soil resistivity and site conditions factors result in these lines being of medium corrosion risk.

The 3 inspected lines were:

12" Line 1505 - AFP suction line

8" Line 1509 - Condensate supply to the CST

10" Overflow line (no line number assigned, corrugated metal pipe) to manhole #5

These pipes run underground in parallel with one another. As stated above, in accordance with the methodology provided by EN-DC-343, for determining the inspection priority and re-inspection interval, Lines 1505 and 1509 are of High Priority. Accordingly, with the initial inspection of these lines performed in October/November 2008, re-inspection of of these lines is required within 8 years, or by September 2016.

The visual inspection of these pipes at the lower excavation revealed that they were in generally good condition, with the coating intact and in acceptable condition. See the attached as-found inspection results by the coatings engineer, and post coating repair inspection reports. A minor coating repair was required at one location on 8" Line 1509, and the 10" overflow line required repair at the top portion of the pipe at the crests of the corrugations, possibly indicative of coating damage during the digging. Based on the results of these pipe visual inspections (at the upper and lower holes), and the coating repairs performed, there was no evidence of any significant pipe degradation that would warrant the re-inspection of these pipes at the same locations. Future inspection of these lines will be performed at different location(s) along their length. The scheduling of the future inspections will be controlled under the IPEC Buried Pipe Program. CA #3 has been created to track the scheduling of the future inspection of these lines, pending formal issue of the IPEC Buried Pipe Program document.

Subresponse :

Closure Comments:

Attachments:

Resp Description

CST Lower Excavation - As-Found Inspection

Attach to CA-2

Lee, Robert C

From: Guarnaccia, Stephen
Sent: Wednesday, November 12, 2008 4:34 PM
To: Lee, Robert C
Cc: Arcate, John; Drake, Richard S; Pineda, Juan J
Subject: Unit 2 CST Piping Inspection

LOWER EXCAVATION

Bob,

I inspected the three CST pipes located in the excavation on the hill north of the Unit 2 VC.

The large diameter pipe's coating, although rather inconsistent in spots, is acceptable. The coating was found to have some reddish material attached to the lower left side that appeared to be corrosion byproducts. I removed a few small samples of the material and checked them with a magnet. They were not ferrous in nature therefore not corrosion products.

The smaller diameter pipe's coating was more uniform in its appearance and in generally good condition. There is one location on the upper top end that has a well defined crack in the coating running circumferentially from the 11 o'clock to the 1 o'clock position. The crack is approximately four or five inches in length with a small amount of corrosion products emanating from it. This area must be repaired in accordance with the same requirements as the previous repairs. In my opinion, judging from the small amount of corrosion products and the good appearance of the coating the pipe does not need to be exposed for a more detailed inspection in order to determine the amount of material lost.

The corrugated pipe has a number of areas where the coating has been removed and they need to be repaired as previously instructed also.

I recommend that you take a look at the pipes yourself to verify my findings in order to resolve the issue.

I could not find your camera cable so I could not attach a picture at this time. Let's get together tomorrow morning after the tailgate and view the pictures.

Steve G. x6609

12" LINE 1505 - AFP SUCTION
 8" LINE 1509 - CONDENSATE SUPPLY TO CST
 10" OVERFLOW - TO MANHOLE #
 (CORRUGATED METAL PIPE)

CA Number: 3

	Site	Group	Name
Assigned By:	IP2	P&C Eng Codes Mgmt IP2	Azevedo,Nelson F
Assigned To:	IP2	P&C Eng Codes Staff IP2	Lee,Robert C

Subassigned To :

Originated By: Azevedo,Nelson F 12/11/2008 12:10:46
Performed By: Lee,Robert C 2/19/2009 22:54:55

Subperformed By:**Approved By:****Closed By:** Lee,Robert C 2/19/2009 22:54:55**Current Due Date:** 02/24/2009**Initial Due Date:** 02/24/2009**CA Type:** ACTION**Plant Constraint:** #NONE**CA Description:**

Track the scheduling of the future inspection of these lines, pending formal issue of the IPEC Buried Pipe Program document.

Response:

In lieu of each of the Entergy sites issuing its own buried piping program document, it has been decided by the Buried Piping Peer Group that a fleet Central Engineering Program (CEP) Buried Piping Program Document will be generated. (Target date for issue is 4th QTR 2009). To manage and track all inspection activities, each site will use Iddeal Scheduleworks (or equivalent) software.

The details and results of the impact, corrosion risk assessments, inspection prioritization and schedules will be captured and maintained by Iddeal Scheduleworks.

For the buried condensate piping from the IP2 CST to the AFW Bldg that is the concern of this CA, as previously stated, these lines are categorized as being high priority for inspection. As such, the re-inspection will be performed 8 years from the initial inspection, or by end of 2016.

Capture of the IPEC buried pipe program activities, key program data and performance indicators into Iddeal is being tracked by LO-HQNLO-2008-00015 CA 65.

Attached to this reponse is an EXCEL spreadsheet identifying the IP2 buried piping inspection schedule. The subject piping and their future inspection dates have been highlighted.

This CA may be closed to the aforementioned HQNLO CA.

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

Resp Description
 IP2 Buried Piping Inspection Schedule

Buried Piping Program Initial Inspection Schedule Template

Plant: IP2
Date: 11/20/2008

# insp sched	year
3	2008
2	2009
6	2010
5	2011
6	2012
3	2013
0	2014
0	2015
3	2016
2	2017
6	2018
5	2019
3	2020
3	2021
3	2022
50	total

HIGH IMPACT PIPING

Insp priority	# of lines	Initial Inspt	end date
HIGH	22	5Y	12/31/2013
MEDIUM	3	8Y	12/30/2016
LOW	0	10Y	12/30/2018
Total	25		

Notes:

- 1) IP2 spreadsheet for development of high level initial schedule, for HIGH IMPACT piping only.
- 2) Initial Inspections: High Priority (RED) - by 2013; Medium (YELLOW) - by 2018
- 3) Subsequent inspection schedule is subject to revision, pending results of initial inspections. High Priority (RED) - within 8 years of initial inspection; Medium Priority (YELLOW) - within 10 years of initial inspection.

Section #	Activity Name	Start (initial)	Finish (initial)	Impact Assessment	Corrosion Risk	Inspection Priority	Initial Inspection (years)	Inspection Interval (years)	Description	System	Initial Inspection (by 2013)	Subsequent Inspection (by 2021)
BP-2CWM-1	Pipe inspection	1/1/2010	12/31/2010	HIGH	MEDIUM	HIGH	5	8	CW Supply Header - 16"	City Water	2010	2018
BP-2CWM-2	Pipe inspection	1/1/2010	12/31/2010	HIGH	MEDIUM	HIGH	5	8	CW to AFP Bldg - 8" Line 1502	City Water	2010	2018
BP-2EDGFO-1	Pipe inspection	1/1/2010	12/31/2010	HIGH	MEDIUM	HIGH	5	8	EDG FOST - 3" equalizing line	Fuel Oil	2010	2018
BP-2EDGFO-2	Pipe inspection	1/1/2010	12/31/2010	HIGH	MEDIUM	HIGH	5	8	EDG FOST - 4" tank fill	Fuel Oil	2010	2018
BP-2SW-1	Pipe inspection	1/1/2011	12/31/2011	HIGH	MEDIUM	HIGH	5	8	Main SW Header - 24" Line 408	Service Water	2011	2019
BP-2SW-2	Pipe inspection	1/1/2011	12/31/2011	HIGH	MEDIUM	HIGH	5	8	Main SW Header - 24" Line 409	Service Water	2011	2019
BP-2SW-3	Pipe inspection	1/1/2012	12/31/2012	HIGH	MEDIUM	HIGH	5	8	SW Branch to IACC HXs- 3" Line 1704	Service Water	2012	2020
BP-2SW-4	Pipe inspection	1/1/2012	12/31/2012	HIGH	MEDIUM	HIGH	5	8	SW Branch to IACC HXs- 3" Line 1705	Service Water	2012	2020
BP-2SW-5	Pipe inspection	1/1/2011	12/31/2011	HIGH	MEDIUM	HIGH	5	8	Return to Discharge Canal - 24" Line 405	Service Water	2011	2019
BP-2AFW-1	Pipe inspection	10/2008 A	11/2008 A	HIGH	MEDIUM	HIGH	5	8	CST to AFWP Suction, 12" Line 1505	Aux Feedwater	4th Qtr 2008 - COMPLETE	2016
BP-2AFW-2	Pipe inspection	10/2008 A	11/2008 A	HIGH	MEDIUM	HIGH	5	8	CST Inlet - 8" Line 1509	Aux Feedwater	4th Qtr 2008 - COMPLETE	2016
BP-2AFW-3	Pipe inspection	1/1/2013	12/31/2013	HIGH	MEDIUM	HIGH	5	8	CST Overflow - 8" (C.M.P.)	Aux Feedwater	2013	2021
BP-2AFW-4	Pipe inspection	10/2008 A	11/2008 A	HIGH	MEDIUM	HIGH	5	8	CST Overflow - 10" (C.M.P.)	Aux Feedwater	4th Qtr 2008 - COMPLETE	2016
BP-2CW-1	Pipe inspection	1/1/2009	12/31/2009	HIGH	MEDIUM	HIGH	5	8	CWP disch to Condenser - 84"	Circulating Water	2009	2017
BP-2CW-2	Pipe inspection	1/1/2009	12/31/2009	HIGH	MEDIUM	HIGH	5	8	CWP disch to Condenser - 84"	Circulating Water	2009	2017

Attch to CA -

Section #	Activity Name	Start (initial)	Finish (initial)	Impact Assessment	Corrosion Risk	Inspection Priority	Initial Inspection (years)	Inspection Interval (years)	Description	System	Initial Inspection (by 2013)	Subsequent Inspection (by 2021)
BP-2CW-3	Pipe inspection	1/1/2010	12/31/2010	HIGH	MEDIUM	HIGH	5	8	CWP disch to Condenser - 84"	Circulating Water	2010	2018
BP-2CW-4	Pipe inspection	1/1/2010	12/31/2010	HIGH	MEDIUM	HIGH	5	8	CWP disch to Condenser - 84"	Circulating Water	2010	2018
BP-2CW-5	Pipe inspection	1/1/2011	12/31/2011	HIGH	MEDIUM	HIGH	5	8	CWP disch to Condenser - 84"	Circulating Water	2011	2019
BP-2CW-6	Pipe inspection	1/1/2011	12/31/2011	HIGH	MEDIUM	HIGH	5	8	CWP disch to Condenser - 84"	Circulating Water	2011	2019
BP-2IA-1	Pipe inspection	1/1/2012	12/31/2012	HIGH	LOW	MEDIUM	8	10	IA Line to Intake Struct - 1½"	Instrument Air	2012	2022
BP-2IA-2	Pipe inspection	1/1/2012	12/31/2012	HIGH	LOW	MEDIUM	8	10	IA Supply to AFP Bldg - 2"	Instrument Air	2012	2022
BP-2IA-3	Pipe inspection	1/1/2012	12/31/2012	HIGH	LOW	MEDIUM	8	10	IA Supply to VC - 2"	Instrument Air	2012	2022
BP-2CPP-1	Pipe inspection	1/1/2011	12/31/2011	HIGH	MEDIUM	HIGH	5	8	1-1/2" piping to penet. - 1½"	Cont. Penet. Press.	2013	2021
BP-2WD-1	Pipe inspection	1/1/2012	12/31/2012	HIGH	MEDIUM	HIGH	5	8	RWST Overflow to WHT Pit. 6" Line 299	Waste Disposal	2012	2020
BP-2WD-2	Pipe inspection	1/1/2013	12/31/2013	HIGH	MEDIUM	HIGH	5	8	PWST Overflow to Line 299 - 3"	Waste Disposal	2013	2021

CA Number: 4

	Site	Group	Name
Assigned By:	IP2	CAA Staff IP2	Reynolds,Joseph A
Assigned To:	IP2	P&C Eng Codes Mgmt IP2	Azevedo,Nelson F

Subassigned To :**Originated By:** Jowitt,Roseann 2/20/2009 06:35:34**Performed By:** Azevedo,Nelson F 2/27/2009 06:56:02**Subperformed By:****Approved By:****Closed By:** Reynolds,Joseph A 2/27/2009 07:45:26**Current Due Date:** 03/04/2009**Initial Due Date:** 03/04/2009**CA Type:** CR CLOSURE REVIEW**Plant Constraint:** #NONE**CA Description:**

CAT-C, ALL CORRECTIVE ACTIONS ARE CLOSED FOR THIS CR, THEREFORE THIS CR MAY BE READY TO CLOSE. REVIEW CR AND APPROVE / DISAPPROVE CLOSURE IN ACCORDANCE WITH EN-LI-102, SECTION 5.9.

Response:

This CR is not ready for closure. CA 005 has been issued for follow up evaluations.

Subresponse :**Closure Comments:**

Per CAA review, noted the CR owner did NOT approve the closure of the CR, and assigned additional action. Therefore this CR removed from the closure process and this completed action closed.

CA Number: 5

	Site	Group	Name
Assigned By:	IP2	P&C Eng Codes Mgmt IP2	Azevedo,Nelson F
Assigned To:	IP2	P&C Eng Codes Staff IP2	Lee,Robert C

Subassigned To :

Originated By: Azevedo,Nelson F 2/27/2009 06:55:05
Performed By: Azevedo,Nelson F 5/27/2009 09:17:22

Subperformed By:

Approved By:
Closed By: Azevedo,Nelson F 5/27/2009 09:17:22

Current Due Date: 05/31/2009 **Initial Due Date:** 05/31/2009

CA Type: ACTION

Plant Constraint: #NONE

CA Description:

Given the results of the leak in the AFP building, determine if the scope and/or frequency of future buried condensate lines should be modified. This should cover both IP2 and IP3.

Response:

The initial Impact and Corrosion Risks assessments for the AFW underground piping were performed iaw fleet procedure EN-DC-343 "Buried Piping & Tank Inspection and Monitoring Program." Those assessment resulted in the categorization of Lines 1505 and 1509 as high inspection priority lines, with first inspection performed within 5 years (by EOY 2012), and subsequent re-inspection within 8 years thereafter (EOY 2020).

Responding to the ISE Panel recommendation to adopt a more aggressive inspection schedule, and specifically to complete excavation and inspections by EOY 2008, the IP2 AFW lines 1505, 1509 and overflow line were excavated and inspected at 2 locations in Nov 2008. While there was some pipe coating degradation observed, there was no evidence of external corrosion. UT determination of the pipe wall thickness at the areas of degraded coating degradation showed that the pipe wall was at least greater than 87.5% of the nominal pipe wall. These findings were consistent with the assessments which established the inspection priority for these lines.

The Failure analysis of the section of removed pipe from Line 1509 containing the through wall failure, and extent of condition review are documented under CR-IP2-2009-00666 CA # 4. As part of extent of condition, additional guided wave inspection of Lines 1505 and 1509 will be performed by September 2009, as follows:

- IP2 8" (Line 1509) Condensate Return Line in the excavated area in the FRV Room. (CR-IP2-2009-00666 CA #21)
- IP2 12" (Line 1505) Condensate Supply Line in the excavated area in the FRV Room. (CR-IP2-2009-00666 CA #22)

- IP3 12" Condensate Supply Line outside the Auxiliary Feedwater Pump Building where it goes underground. (CR-IP2-2009-00666 CA #24)
- IP3 8" Condensate Return Line outside the Auxiliary Feedwater Pump Building where it exits the ground. (CR-IP2-2009-00666 CA #25)

The results of the above additional inspections will be evaluated by PCE and used to adjust the (EN-DC-343 specified) 8 year interval for subsequent inspections, as appropriate.

Response :

Closure Comments:

CA Number: 6

	Site	Group	Name
Assigned By:	IP2	CAA Mgmt IP2	Donnelly,John M
Assigned To:	IP2	P&C Eng Codes Mgmt IP2	Azevedo,Nelson F

Subassigned To :

Originated By: Reynolds,Joseph A 5/14/2009 10:55:07

Performed By: Azevedo,Nelson F 5/27/2009 09:19:17

Subperformed By:

Approved By:

Closed By: Reynolds,Joseph A 5/27/2009 09:33:54

Current Due Date: 06/04/2009

Initial Due Date: 06/04/2009

CA Type: CR CLOSURE REVIEW

Plant Constraint: #NONE

CA Description:

Periodic Review CA

Please note, this CAT C CR has been open approximately greater than 6 months and therefore requires a periodic review per attachment 9.8 of EN-LI-102. Ensure attachment 9.8 (attached) is completed. Review and complete the Long Term 9.9 form if appropriate. Both forms are required if the CR is classified as a Long Term CR.

In accordance with EN-LI-102, Corrective Action Process, section 5.8 [5] (a) and/or (b) a periodic review of the CR is needed to assure the timeliness challenges for the issue resolution are understood, the impact to plant operations under the present plant conditions as well as the continued risk imposed by the action remaining open are acceptable, the repair priority is appropriate and the administrative CA processing expectations have been performed as expected thus far for the CR (i.e. CARB approvals, Extensions approved by correct level of management, etc).

As the CR owner, please review the Condition Report IAW EN-LI-102 section 5.8 [5] (a) (1) through (7) and document the resolution to the procedure discussion points. Attachment 9.8 to LI-102 (a form) is available from the CA&A webpage to assist in the review.

IF your review determines the CR should also be reclassified as a Long Term CR, ensure the information requested in attachment 9.9 to LI-102 (another form available via the CA&A webpage) is captured in the CA response. Reclassifying the CR as long term (if appropriate) lengthens the periodic review to annually.

For all cases, LI-102 requires the Director or GMPO level position (or higher) that approved/acknowledged the acceptability of the periodic review conclusions to be documented.

Document the results of the periodic review in the response to this new CA. If used, attach the completed CR periodic review form (LI-102 - attachment 9.8) to the response section of this CA.

Remember the Long Term classification only applies if the restriction to completing the task involves one of the following four plant/process restrictions. (1) A Modification or Design Change must be completed to resolve the action, (2) More than one training cycle is required to complete the action, (3) Outside Regulator Agency (NRC, etc) approval is required to complete the action, (4) a Forced Outage or Refueling Outage or FEG week of sufficient duration is required to establish plant conditions to complete the action.

Response:

All CAs from this CR are now closed and no additional corrective actions are required at this time. Therefore, this evaluation is no longer required since this CR is now ready for closure.

Subresponse :

Closure Comments:

Per CAA review, noted the CR owner recommended and approved the closure of the CR (this was verified via verbal communication with respondent by the CAA reviewer). Therefore this interim review action is no longer needed and was closed. CAA changed the CA type to closure review and updated the trend codes to reflect the status of the review. Then this completed action closed.

Attachments:

Ca Description
Periodic review form