

DiabloCanyonNPEM Resource

From: Grebel, Terence [TLG1@pge.com]
Sent: Thursday, October 28, 2010 5:52 PM
To: Pick, Greg
Cc: Tan, Miranda
Subject: FW: Here's all but one for my AMPs
Attachments: 50123904.pdf; TS1ID11 Selective Leaching.DOC; A0350059.pdf; A0431200.pdf; A0438773.pdf; A0442225.pdf; A0460974.pdf; 50297724.pdf

From: Braico, Kevin
Sent: Thursday, October 28, 2010 2:22 PM
To: Tan, Miranda
Cc: Gibbons, Daniel J; Grebel, Terence
Subject: Here's all but one for my AMPs

Documents Needed

Selective Leaching

Notification 50123904

<<50123904.pdf>>

Procedure TS1.IDXX "Selective Leaching Degradation Program," Revision 0

<<TS1ID11 Selective Leaching.DOC>>

Buried Piping

A0350059

<<A0350059.pdf>>

A0431200

<<A0431200.pdf>>

A0438773

<<A0438773.pdf>>

A0442225

<<A0442225.pdf>>

A0460974

<<A0460974.pdf>>

Notifications

50297724

<<50297724.pdf>>

Fuel Oil Chemistry

2005 and 2009 chemistry audits electronically
IN PROGRESS

Thanks,

Kevin Braico

DCPP License Renewal Engineer
142 Cross St. Suite 200
San Luis Obispo, CA 93405
Phone: (805) 781-9414

Hearing Identifier: DiabloCanyon_LicenseRenewal_NonPublic
Email Number: 2048

Mail Envelope Properties (855985CB2A096741901904980FD8CB6C0408BC5E)

Subject: FW: Here's all but one for my AMPs
Sent Date: 10/28/2010 5:51:37 PM
Received Date: 10/28/2010 5:51:45 PM
From: Grebel, Terence

Created By: TLG1@pge.com

Recipients:
"Tan, Miranda" <M1TF@pge.com>
Tracking Status: None
"Pick, Greg" <Greg.Pick@nrc.gov>
Tracking Status: None

Post Office: exchange18.Utility.pge.com

Files	Size	Date & Time
MESSAGE	890	10/28/2010 5:51:45 PM
50123904.pdf	62476	
TS11D11 Selective Leaching.DOC		154688
A0350059.pdf	41629	
A0431200.pdf	36085	
A0438773.pdf	18574	
A0442225.pdf	42182	
A0460974.pdf	20105	
50297724.pdf	22586	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.**Funct. Loc: **DC-0-18-P-P****U0 SYS 18 PIPING PIPE**Reported By: **MWL9** Michael W. LeeRpt By Work Ctr: **OPSD**

Contact Info:

Created On: **17 Dec 08 10:42**Planner Group: **CPC** Const PIng - CivilMain Wrk Ctr: **MCC-PIPE** Maint Const Crew - Pipefitter

PROBLEM DESCRIPTION

12/17/2008 10:35:51 Michael W. Lee (MWL9) Phone 805/545-3243

An underground fire water line to startup transformer 2-1 has broken.

Fire water was flowing heavily from a hole at the base of the fire water deluge station for SU trans. 2-1. Flow was stopped by closing FW-1-FP7, isolating supply to the transformer. This also isolated fire water to SU trans. 1-1.

12/17/2008 13:34:17 Chai Chingburanakit (SXC8)

EFIN CIVIL ENGINEERING'S RESPONSE: A walkdown was performed by SXC8, CFK1, and JEB6 to identify/determine any structural damage due to the leaking underground pipe. There were no damage and/or undermining of any structure found in the vicinity during the walkdown. Shoring to support excavation to locate the leak and leak repair of piping.

12/17/2008 15:25:11 Daniel R. Stermer (DRS5)

See clearance 0C15 D-18-058 and tech spec 1-TS-08-0336.

12/22/2008 15:43:46 Beverly J. Jones (BJA1) Phone 805/545-4044

The issue/event documented on this notification was reviewed by the Notification Review Team (NRT) and determined to be the indicated significance level per OM7.ID1. If additional information is discovered that would affect the significance level determination, contact a member of the NRT.

12/22/2008 18:44:08 Beverly J. Jones (BJA1) Phone 805/545-4044

Event Date **17 Dec 08**Notif Required By **31 Mar 09**Station Sig.: **2 Work Group Eval**

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.**

This DN notification has a condition report (DA) created. All responses to address the condition report aspect (human performance, organizational, programmatic/process) should be documented on the DA (to find number, click on task tab, DA number is indicated in the task text of code DG-CR).

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12/23/2008 13:43:03 Chad C. Sorensen (CCSN) Phone 805/545-4467

Images of damaged pipe are attached to this Notification.

STATUS DETAILS

System Status: **NOPR ORAS NOPT OSTs**User Status: **20 APPV** Approved

Task # 1 Notification Tag Control

Status: **TSRL**

Task Released

Code Group: **DO-TRACK**

DC Operations

Task Code: **NTAG**

Notification Tag

Responsible: **User Responsible**

Work Ctr:

Created On: **17 Dec 08**By: **MWL9** Michael W. LeePlanned Start: **17 Dec 08**Planned Finish: **17 Dec 08**

Completed On:

By:

12/17/2008 10:40:03 Michael W. Lee (MWL9) Phone 805/545-3243
Remove Notification Tag And Complete Task Prior To Completing Notification.

TAG LOCATION: on SU transformer 2-1 deluge header, directly north of U1 TB.

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.**

Task # 2

Status: TSCO	Task Completed
Code Group: DO-EFFCT	DC Plant Effect Assessment
Task Code: SFMR	SFM Review
Responsible: User Responsible	
Work Ctr: OPR	Operations Crew - On Shift
Created On: 17 Dec 08	By: MWL9 Michael W. Lee
Planned Start: 17 Dec 08	Planned Finish: 17 Dec 08
Completed On: 17 Dec 08 15:29	By: DRS5 Daniel R. Stermer

Task # 3 Prepare LBIE AD for excavation

Status: TSCO	Task Completed
Code Group: DG-EVAL	DC General Evaluations
Task Code: EVAL	Evaluate the following (See Long Text)
Responsible: User Responsible	CFK1 Carl F. Knifton 805/545-6760
Work Ctr: MCC-FE04	DO NOT USE
Created On: 17 Dec 08	By: GCA1 Gil C. Apodaca
Planned Start: 17 Dec 08	Planned Finish: 17 Dec 08
Completed On: 18 Dec 08 15:44	By: CFK1 Carl F. Knifton 805/545-6760

12/17/2008 14:47:19 Gil C. Apodaca (GCA1) Phone 805/545-6650
Please perform LBIE applicability determination for excavation at underground firewater line break near SUT 2-1.

12/18/2008 15:43:04 Carl F. Knifton (CFK1) Phone 805/545-6760
THIS LBIE AD ADDRESSES ONLY THE EXCAVATION FOR THE REPAIR OF THE FIREWATER LINE NORTH OF THE TURBINE BUILDING FOR THE START UP TRANSFORMER 2-1 DELUGE SYSTEM.
THE FIREWATER PIPING BURST IN THE AREA AND WATER WAS GUSHING OUT OF THE AREA.
THE SIZE OF THE EXCAVATION WILL BE APPROXIMATELY 15 FT X 15 FT X 7 FT DEEP AT THE DEEPEST POINT.
THIS WORK IS IN SUPPORT FOR REPAIR FOR THE FIREWATER PIPING AND IS MAINTENANCE.
THERE ARE VARIOUS UTILITIES IN THE AREA.
REFERENCE DWGS: 438145, 438149, AND 438068.
ENGINEERING HAS EVALUATED THE EXISTING FOUNDATIONS AND UNDERGROUND

U-0

Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

UTILITIES FOR THE NEED TO SUPPORT AND/OR BRACE. SEE TASK 6.

LBIE APPLICABILITY DETERMINATION

LBIE SCREEN:

1. PROPOSED ACTIVITY/IMPLEMENTING DOCUMENT NO:
NOTIFICATION 50123904.

BRIEFLY DESCRIBE WHAT IS BEING CHANGED AND WHY.
PROVIDE THE EXCAVATION FOR THE FIREWATER LINE NORTH OF THE
TURBINE BUILDING FOR THE START UP TRANSFORMER 2-1 DELUGE
SYSTEM.

THE FIREWATER PIPING BURST IN THE AREA AND WATER WAS
GUSHING OUT OF THE AREA.

THE SIZE OF THE EXCAVATION WILL BE APPROXIMATELY 15 FT X 15 FT
X 7 FT DEEP AT THE DEEPEST POINT.

THIS WORK IS IN SUPPORT FOR THE MAINTENANCE REPAIR OF THE
FIREWATER LINE.

SOIL IS COVERED IN THE Q-LIST IN SECTIONS I.M.7, SLOPE EAST OF
THE POWER BLOCK AND III.H.4.1.2, COMPONENTS FOR BURIED
BYPASS PIPING NORTH OF THE INTAKE STRUCTURE. THE SOIL/SLOPE
CLASSIFICATION IS QUALITY CLASS 'S', DESIGN CLASS II. THE SLOPE
EAST OF THE INTAKE STRUCTURE FOR THE QUALITY CLASS 'S' SOIL
AS SHOWN ON DRAWING 445675.

THIS EXCAVATION IS NOT NEAR ANY QUALITY CLASS 'S' SOIL AND IT IS
ACCEPTABLE TO EXCAVATE IN THE AREA.

2. APPLICABILITY DETERMINATION.

DOES THE PROPOSED ACTIVITY INVOLVE:

2A. A CHANGE TO THE FACILITY/ISFSI OPERATING LICENSE (OL),
ENVIRONMENTAL PROTECTION PLAN (EPP) OR TECHNICAL
SPECIFICATIONS (TS)? THE ANSWER IS NO.

2B. A CHANGE TO THE QUALITY ASSURANCE PROGRAM? THE ANSWER
IS NO.

2C. A CHANGE TO THE SECURITY PLAN? THE ANSWER IS NO

2D. A CHANGE TO THE EMERGENCY PLAN? THE ANSWER IS NO.

2E. A CHANGE TO THE INSERVICE TESTING (IST) PLAN? THE ANSWER
IS NO.

2F. A CHANGE TO THE INSERVICE INSPECTION (ISI) PLAN? THE
ANSWER IS NO.

2G. A CHANGE TO THE FIRE PROTECTION PLAN? THE ANSWER IS NO.

2H. A NONCOMPLIANCE WITH THE ENVIRONMENTAL PROTECTION
PLAN OR MAY CREATE A SITUATION ADVERSE TO THE ENVIRONMENT?
THE ANSWER IS NO.

2I. A CHANGE TO THE FSARU (INCLUDING DOCUMENTS
INCORPORATED BY REFERENCE) EXCLUDED FROM THE
REQUIREMENT TO PERFORM A 50.59/72.48 REVIEW? THE ANSWER IS
NO.

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Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

2J. MAINTENANCE THAT RESTORES SSCS TO THEIR ORIGINAL OR NEWLY APPROVED DESIGNED CONDITION? THE ANSWER IS YES. NO 10 CFR 50.59 IS REQUIRED.
2K. A TEMPORARY ALTERATION SUPPORTING MAINTENANCE THAT WILL BE IN EFFECT DURING AT-POWER OPERATIONS FOR 90 DAYS OR LESS? THE ANSWER IS NO.

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Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

2L. MANAGERIAL OR ADMINISTRATIVE PROCEDURE/PROCESS CONTROLLED UNDER 10 CFR 50, APP. B? THE ANSWER IS NO.
2M. REGULATORY COMMITMENT NOT COVERED BY ANOTHER REGULATORY BASED CHANGE PROCESS? THE ANSWER IS NO.
2N. AN IMPACT TO OTHER SPECIFIC PROGRAMS (E.G. THE ODCM) THAT ARE CONTROLLED BY REGULATIONS, THE OL OR TS? THE ANSWER IS NO.

3. APPLICABILITY DETERMINATION CONCLUSIONS:

A 10CFR 50.59 SCREEN WILL NOT BE COMPLETED BECAUSE ALL OF THE ASPECTS OF THE ACTIVITY ARE CONTROLLED BY SOME OF THE PROCESSES LISTED ABOVE.

A 10 CFR 72.48 SCREEN IS NOT REQUIRED SINCE THE EXCAVATION IS FAR FROM ANY DRY CASK ROUTE.

4. DOES THE PROPOSED ACTIVITY INVOLVE A CHANGE TO THE PLANT WHERE THE CHANGE REQUIRES A SAFETY ASSESSMENT? THE ANSWER IS NO.

5. REMARKS:

DISCUSSION FOR SECTION 2.A, CHANGE TO THE FACILITY/ISFSI OPERATING LICENSE (OL), ENVIRONMENTAL PROTECTION PLAN (EPP) OR TECHNICAL SPECIFICATIONS (TS):

THE GROUND EXCAVATION FOR THE REPAIR OF THE FIREWATER LINE DOES NOT INVOLVE A CHANGE TO THE FACILITY/ISFSI OPERATING LICENSE (OL), ENVIRONMENTAL PROTECTION PLAN (EPP) OR TECHNICAL SPECIFICATION (TS). A REVIEW OF THE TECHNICAL SPECIFICATIONS DETERMINED THAT NO CHANGES TO TECHNICAL SPECIFICATIONS ARE REQUIRED TO IMPLEMENT THIS EXCAVATION. IMPLEMENTING ACTIVITIES ARE PROGRAMMED TO COMPLY FULLY WITH THE APPLICABLE REQUIREMENTS CONTAINED IN THE PLANT TECHNICAL SPECIFICATIONS.

THE LOCATION OF THE EXCAVATION IS OUTSIDE THE POWER BLOCK BUILDINGS BUT WITHIN THE STARTUP TRANSFORMER AREA. THE EXCAVATION IS NOT NEAR ANY OF THE QUALITY CLASS 'S' SOIL. THE FIRE WATER PIPING WILL BE EXPOSED IN THIS AREA FOR REPAIR. THE FIREWATER LINE HAS BEEN TAKEN OUT OF SERVICE AND IS BEING CONTROLLED BY PLANT PROCEDURES AND OPERATIONS. THE EXCAVATION WILL NOT CHANGE ANY OF THE REQUIREMENTS LISTED ABOVE.

SOIL IS LISTED IN THE Q-LIST, SECTIONS I.M.7, SLOPE EAST OF THE POWER BLOCK AND III.H.4.1.2, COMPONENTS FOR BURIED BYPASS PIPING NORTH OF THE INTAKE STRUCTURE. THE SOIL/SLOPE CLASSIFICATION IS QUALITY CLASS 'S', DESIGN CLASS II.

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Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

THIS WAS REVIEWED WITH ENVIRONMENTAL GROUP, TREVOR REBEL AND VERBALLY VERIFIED THAT THERE IS NO IMPACT TO THE ENVIRONMENT PLAN ON 12/17/08. SOIL SHALL BE CONTROLLED AT ALL TIMES.

DISCUSSION FOR SECTION 2.B, CHANGE TO THE QUALITY ASSURANCE PROGRAM:

THIS LBIE APPLICABILITY DETERMINATION IS ONLY FOR EXCAVATION. THE FIREWATER PIPING IN THIS AREA WILL BE REPAIRED AS MAINTENANCE AND THE REPAIR WILL BE CONTROLLED BY THE WORK ORDER.

SOIL IS COVERED IN THE Q-LIST IN SECTION I.M.7, SLOPE EAST OF THE POWER BLOCK AND III.H.4.1.2, COMPONENTS FOR BURIED BYPASS PIPING NORTH OF THE INTAKE STRUCTURE. THE SOIL/SLOPE CLASSIFICATION QUALITY CLASS IS 'S', DESIGN CLASS II. THE 'S' SOIL AT THE TOP OF THE SLOPE EAST OF THE INTAKE STRUCTURE SHOWN DWG 445674.

SINCE THE WORK WILL NOT IMPACT THE DESIGN FUNCTION OF SOIL IN THIS AREA AND THE SOIL WILL BE RETURN TO THE DESIGN CONFIGURATION, THERE WILL BE NO CHANGES TO THE DCPQ QA PROGRAM AS A RESULT OF THIS EXCAVATION.

DISCUSSION FOR SECTION 2.C, CHANGE TO THE SECURITY PLAN:

THIS GROUND EXCAVATION WAS REVIEWED AGAINST THE SECURITY PLANS PRE-SCREEN ITEMS IN APPENDIX 7.5 OF PROCEDURE TS3.ID2, LICENSING BASIS IMPACT EVALUATIONS. THE WORK INVOLVES EXCAVATION THAT IS NOTED IN APPENDIX 7.5.

THEREFORE, SECURITY HAS EVALUATED AND NOTED THAT THERE IS NO IMPACT TO THE SECURITY PLAN. THIS WAS REVIEWED WITH SECURITY GROUP, TIM GRAF AND VERBALLY VERIFIED THAT THERE IS NO IMPACT TO THE SECURITY PLAN ON 12/18/08.

THE EXCAVATION IS NOT WITHIN 10 FEET OF ANY SECURITY BARRIERS. LIGHTING WILL BE PROVIDED AT THE EXCAVATION.

DISCUSSION FOR SECTION 2.D, CHANGE TO THE EMERGENCY PLAN:

THIS WORK WAS REVIEWED AGAINST THE EMERGENCY PLAN PRE-SCREEN CRITERIA OF APPENDIX 7.4 OF PROCEDURE TS3.ID2, LICENSING BASIS IMPACT EVALUATIONS, AS WELL AS THE EMERGENCY PLAN ITSELF TO DETERMINE IS ANY POTENTIAL IMPACTS TO THE EMERGENCY PLAN WOULD RESULT FROM IMPLEMENTATION OF THIS EXCAVATION. THE EXCAVATION DOES NOT IMPACT ANY EVACUATION ROUTES FROM THE PLANT. NO REPAIR IMPLEMENTATION ACTIVITIES WERE IDENTIFIED WHICH COULD IMPACT ANY OF THE EMERGENCY PLAN ILLUSTRATIONS/FIGURES, ASSUMPTIONS, CONCLUSIONS, OR ANY OF THE APPENDIX 7.4 LISTED EMERGENCY PLAN PRE-SCREEN ITEMS.

U-0

Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

DISCUSSION FOR SECTION 2.E, CHANGE TO THE INSERVICE TESTING (IST) PLAN:
EXCAVATION OF SOIL WILL NOT INVOLVE ANY INSERVICE INSPECTION.
THE WORK IS NOT SAFETY-RELATED AND NOT COVER BY ASME CODE.
THEREFORE THE (IST)

U-0

Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

PROGRAM PLAN IS NOT AFFECTED.

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DISCUSSION FOR SECTION 2.F, CHANGE TO THE INSERVICE
INSPECTION (ISI) PLAN:

EXCAVATION OF SOIL WILL NOT INVOLVE ANY INSERVICE INSPECTION.
THE WORK IS NOT SAFETY-RELATED AND NOT COVER BY ASME CODE.
THEREFORE THE (ISI) PROGRAM PLAN IS NOT AFFECTED.

.
DISCUSSION FOR SECTION 2.G, CHANGE TO THE FIRE PROTECTION
PLAN:

THE EXCAVATION WILL NOT CREATE ANY PERMANENT NEW FIRE
LOADS TO ANY AREAS. THE EXCAVATION DOES NOT IMPACT THE FIRE
DETECTION, PROTECTION, MONITORING FUNCTIONS, RESPONSE TO A
FIRE CALL, OR INGRESS/EGRESS PERSONNEL PATHWAYS IN
RESPONSE TO A FIRE. THE FIREWATER PIPING TO IN THIS AREA WILL
BE REPAIRED AND IS UNDER THE DIRECTION OF OPERATIONS FOR
COMPLIANCE TO PLANT PROCEDURES.

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DISCUSSION FOR SECTION 2.H, NONCOMPLIANCE WITH THE
ENVIRONMENTAL PROTECTION PLAN OR MAY CREATE A SITUATION
ADVERSE TO THE ENVIRONMENT:

THIS GROUND EXCAVATION WAS REVIEWED AGAINST THE
ENVIRONMENTAL EVALUATION PRE-SCREEN CRITERIA OF APPENDIX
7.3 OF PROCEDURE TS3.ID2, LICENSING BASIS IMPACT EVALUATIONS.
IN APPENDIX 7.3 ENVIRONMENTAL EVALUATION PRE-SCREEN
CRITERIA EXCAVATION IS MENTIONED. THE SOIL SHALL BE
PREVENTED FROM RUNNING OFF INTO THE ENVIRONMENT AND SHALL
BE CONTROLLED AT ALL TIMES. THIS AREA HAS BEEN PREVIOUSLY
DISTURBED.

THE ENVIRONMENTAL GROUP SHALL EVALUATE THE EXCAVATION
FOR A SITUATION ADVERSE TO THE ENVIRONMENT.

THIS WAS REVIEWED WITH ENVIRONMENTAL GROUP, TREVOR REBEL
AND VERBALLY VERIFIED THAT THERE IS NO IMPACT TO THE
ENVIRONMENT PLAN ON 12/17/08.

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DISCUSSION FOR SECTION 2.I, CHANGE TO THE FSARU (INCLUDING
DOCUMENTS INCORPORATED BY REFERENCE) EXCLUDED FROM THE
REQUIREMENT TO PERFORM A 50.59/72.48 REVIEW:

SECTIONS 2.4.5.7 AND 9.2.7.2.4 WERE REVIEWED FOR SOIL AND
TSUNAMI CONCERNS FOR THE ASW PIPING.

THERE ARE NO CHANGES TO THE FSARU THAT RESULT FROM
IMPLEMENTING THIS EXCAVATION (INCLUDING DOCUMENTS
INCORPORATED BY REFERENCE), WHICH ARE EXCLUDED FROM THE
REQUIREMENT TO PERFORM A 50.59/72.48 REVIEW. SOIL AND

U-0

Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

TSUNAMI ARE ONLY DISCUSSED GENERICALLY IN REFERENCE TO THE QUALITY CLASS 'S' SOIL. THE AREA TO BE EXCAVATED IS NOT NEAR THE QUALITY CLASS 'S' SOIL.

72.48 REVIEW IS NOT REQUIRED SINCE THE AREA OF THE EXCAVATION IS NOT ANY WHERE NEAR THE ROUTE THAT THE DRY CASK WILL TAKE.

DISCUSSION FOR SECTION 2.J, MAINTENANCE THAT RESTORES SSCS TO THEIR ORIGINAL OR NEWLY APPROVED DESIGNED CONDITION: THE EXCAVATION IS IN SUPPORT OF MAINTENANCE TO REPAIR A LEAKING FIREWATER VALVE. THE EXCAVATION WILL REMOVE THE SOIL AND THEN REPLACE THE SOIL IN THE SAME CONFIGURATION TO RETURN THE SOIL TO ITS DESIGN CONFIGURATION.

DISCUSSION FOR SECTION 2.K, TEMPORARY ALTERATION SUPPORTING MAINTENANCE THAT WILL BE IN EFFECT DURING AT POWER OPERATIONS FOR 90 DAYS OR LESS. THIS LEAK REPAIR IS PERMANENT REPAIR OF PIPING.

DISCUSSION FOR SECTION 2.L, MANAGERIAL OR ADMINISTRATIVE PROCEDURE/PROCESS CONTROLLED UNDER 10 CFR 50, APP. B: THIS EXCAVATION DOES NOT INVOLVE A CHANGE TO MANAGERIAL OR ADMINISTRATIVE PROCEDURES/PROCESS CONTROLLED UNDER 10 CFR 50, APPENDIX B. THE WORK WILL BE DONE IN ACCORDANCE WITH EXISTING PLANT PROCEDURES.

DISCUSSION FOR SECTION 2.M, REGULATORY COMMITMENT NOT COVERED BY ANOTHER REGULATORY BASED CHANGE PROCESS: IN PREPARING FOR EXCAVATION, THE PROCEDURE COMMITMENT DATABASE (PCD) WAS REVIEWED, VIA THE PIMS PROGRAM. NO ITEM WAS DISCOVERED WHERE THE MODIFICATIONS PERFORMED FOR EXCAVATION OR ITS IMPLEMENTING ACTIVITIES WOULD BE IN VARIANCE WITH DCPD REGULATORY COMMITMENTS AND OBLIGATIONS.

DISCUSSION FOR SECTION 2.N, AN IMPACT TO OTHER SPECIFIC PROGRAMS (E.G. THE ODCM) THAT ARE CONTROLLED BY REGULATIONS, THE OL OR TS: THE SCOPE OF THE EXCAVATION ACTIVITIES WAS REVIEWED FOR APPLICABILITY TO THE REGULATORY PROCESS DESCRIBED IN THE USA 50.59 RESOURCE MANUAL, SECTION 4.2.1 (OTHER REGULATORY REQUIREMENTS AND CONTROLS). THE WORK RELATED TO THE EXCAVATION WAS REVIEWED TO SECTION 4.2.1 AND THE ITEMS DESCRIBED DO NOT COVER THE WORK. THE WORK DOES NOT IMPACT OTHER PROGRAMS.

APPLICABILITY DETERMINATION CONCLUSION:

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.**

A 10 CFR 50.59 LBIE SCREEN IS NOT REQUIRED BECAUSE ALL ASPECTS OF THE ACTIVITY ARE CONTROLLED BY ONE OR MORE OF THE PROCESSES LISTED ABOVE (I.E. THE EXCAVATION IS PART OF A MAINTENANCE TO RETURN THE SSC TO ITS ORIGINAL DESIGN CONDITION).

A 10 CFR 72.48 IS NOT REQUIRED SINCE THE WORK IS NOT NEAR ANY DRY CASK ROUTES.

DISCUSSION FOR SECTION 4, DOES THE PROPOSED ACTIVITY INVOLVE A CHANGE TO THE PLANT WHERE THE CHANGE REQUIRES A SAFETY ASSESSMENT:

BASED ON A REVIEW OF THE SAFETY ASSESSMENT CRITERIA OF APPENDIX 7.6 OF PROCEDURE TS3.ID2, LICENSING BASIS IMPACT EVALUATIONS, THE REQUIREMENT FOR A SEPARATELY PERFORMED SAFETY ASSESSMENT DOES NOT APPLY TO THE EXCAVATION SINCE THE EXCAVATION IS NOT NEAR ANY QUALITY CLASS 'S' SOIL. ENGINEERING HAS EVALUATED THE EXISTING FOUNDATIONS AND UNDERGROUND UTILITIES FOR THE NEED TO SUPPORT AND/OR BRACE. SEE TASK 6.

Task # 4

Status: **TSCO**

Task Completed

Code Group: **DO-OPER**

Operability Evaluation

Task Code: **INOP**

SSC is Inoperable

Responsible: **User Responsible**Work Ctr: **MCC-FE04**Created On: **17 Dec 08**By: **DRS5** Daniel R. StermerPlanned Start: **17 Dec 08**Planned Finish: **17 Dec 08**Completed On: **17 Dec 08 15:29**By: **DRS5** Daniel R. Stermer

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.****Task # 5** Extent of the condition

Status: TSCO	Task Completed
Code Group: DG-EVAL	DC General Evaluations
Task Code: EVAL	Evaluate the following (See Long Text)
Responsible: User Responsible	SXC8 Chai
Work Ctr: EIF-007	Green Erban - ELG1
Created On: 17 Dec 08	By: JES2 Joy E. Skaggs
Planned Start: 23 Dec 08	Planned Finish: 23 Dec 08
Completed On: 23 Dec 08 13:51	By: SXC8 Chai

12/17/2008 22:10:44 Joy E. Skaggs (JES2)

Perform an extent of condition review for similar fire water piping.

12/18/2008 13:03:11 Daniel E. Hromyak (DEHB) Phone 805/545-4256

Ref. 50034095 for degraded condition found at similar location at deluge valve FP-2-FCV-213. FP maintenance strategy for buried pipe is run to failure based on recent studies documented in the buried pipe life cycle management (LCM) report (filenet path eng/syseng/releng/lcm). ATS corrosion specialist recommends the addition of cathodic protection to yard loop metal risers (ref. 2007 ATS fire water system corrosion protection and monitoring annual report). FP SE to develop PHIP to replace risers to yard loop deluge stations with addition of cathodic protection considering the ATS recommendation, LCM corrosion projections, and recent exterior FP corrosion problems both underground and above ground. This is a long term aging issue.

12/23/2008 13:46:50 Chai Chingburanakit (SXC8)

Normally, underground/buried pipes sustain damage due to heavy loads being transported over the area, differential settlement of soil adjacent to the piping, seismic events, age of the pipe (corrosion), water hammer, and extreme temperature change (cold). However, the damaged location of this piping is on the vertical section of the pipe. The break is approximately 2" diameter hole. This portion of the pipe is located in the area where no heavy load was being transported over the pipe. From the configuration and the location of the break it is unlikely to have been caused by water hammer (the hole close to the mid span of the straight pipe. Normally pipe ruptures due to water hammer most likely happen where the pipe changes direction or at the end connections). It was not cause by seismic event or extreme temperature change. There is minor rust on outside surface of the pipe and not around the break area. The wall around the hole seems to have uniform nominal thickness. Engineering concluded that the possible cause for the pipe to break in the existing location is either a defect on the

piping during fabrication and or was damaged or weakened during construction or installation activities. Vertical cast iron pipe break in such manner is very unusual through out the history of the plant. This is just to be an isolated case. Therefore, the extended condition is confined to this location.

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.****Task # 6 Supporting of unground**Status: **TSCO**

Task Completed

Code Group: **DE-ENG-T**

Diablo Engineering Tasks

Task Code: **0065**

Engineering Evaluation

Responsible: **User Responsible****SXC8**

Chai

Work Ctr: **EIF-007**Created On: **18 Dec 08**By: **CFK1** Carl F. KniftonPlanned Start: **18 Dec 08**Planned Finish: **18 Dec 08**Completed On: **18 Dec 08 13:00**By: **SXC8** Chai

12/18/2008 12:39:49 Carl F. Knifton (CFK1) Phone 805/545-6760

Please, evaluate the need of supporting/bracing of plant components in the area of the excavation.

Conduits have been placed over the top of the pipe and the excavation will expose the conduit/duct bank. Will this need to be supported? Provide details for the supports.

A bus duct support is within the excavation area also. Does this need to be braced?

Provide any other support information as needed.

12/18/2008 12:50:03 Chai Chingburanakit (SXC8)

Efin civil engineering's response: A walkdown was performed by SXC8 of Efin and the carpenter foremen to determine how to temporarily support the bus duct and the deluge piping via scaffolding as a secondary measure.

Engineering will provide all necessary details to support the bus duct and deluge piping to the carpenters as required.

Task # 7 Provide coating & asbestos removal supt.Status: **TSCO**

Task Completed

Code Group: **DG-RSTR**

Restraints

Task Code: **PLNC**

Construction Planning

Responsible: **User Responsible****MSCE**

Michael S. Crigler

805/545-3881Work Ctr: **MCD-INS**

Foreman - Isulation - Jeff Maysey

Created On: **18 Dec 08**By: **GTG5** George T. GerczakPlanned Start: **22 Dec 08**Planned Finish: **24 Dec 08**Completed On: **22 Dec 08 12:21**By: **MSCE** Michael S. Crigler **805/545-3881**

12/18/2008 14:41:21 George T. Gerczak (GTG5) Phone 805/545-6426

Please provide coatings support for any modifications to the underground

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.**

fire protection system as needed. Reference drawing 438145 related to any replacement of existing material with ductile iron. Any replacement of existing ACP (asbestos-cement pipe) would also require support.

12/22/2008 12:16:00 Michael S. Crigler (MSCE) Phone 805/545-3881

See order 60009806 providing coating support for this project. note; There is no provision for asbestos since the replacement pipe riser is the only work intended. Mike Crigler

Task # 8 ITR for LBIE AD

Status: **TSCO**

Task Completed

Code Group: **DG-EVAL**

DC General Evaluations

Task Code: **EVAL**

Evaluate the following (See Long Text)

Responsible: **User Responsible****SXC8**

Chai

Work Ctr: **MCD-INS**Created On: **18 Dec 08**By: **CFK1** Carl F. KniftonPlanned Start: **18 Dec 08**Planned Finish: **18 Dec 08**Completed On: **18 Dec 08 15:59**By: **SXC8** Chai

12/18/2008 14:55:19 Carl F. Knifton (CFK1) Phone 805/545-6760

Please, perform the ITR for the LBIE AD for the excavation.

12/18/2008 15:59:22 Chai Chingburanakit (SXC8)

I HAVE REVIEWED THE LBIE APPLICABILITY DETERMINATION AND CONCUR WITH THE CONCLUSION. ALL QUESTIONS IN THE LBIE APPLICABLE DETERMINATION HAVE BEEN ANSWERED. ALL THE APPLICABLE COORDINATION HAVE BEEN VERBALLY COORDINATED.

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.****Task # 9** MRFF = YesStatus: **TSCO** Task CompletedCode Group: **DE-MRULE** DC Maintenance RuleTask Code: **RFFY** Maint Rule Funct. Failure: YESResponsible: **User Responsible**Work Ctr: **EADM** Maintenance Rule Eval - TaskCreated On: **18 Dec 08** By: **JES2** Joy E. SkaggsPlanned Start: **18 Dec 08** Planned Finish: **17 Jan 09**Completed On: **19 Dec 08 16:45** By: **DEHB** Daniel E. Hromyak **805/545-4256**

12/19/2008 16:44:55 Daniel E. Hromyak (DEHB) Phone 805/545-4256

Loss of pressure boundary occurred rendering deluge to 3 transformers inop.

Task # 10Status: **TSCO** Task CompletedCode Group: **DG-EVAL** DC General EvaluationsTask Code: **NRT** NRT Review Item/RequestResponsible: **User Responsible**Work Ctr: **NP-NRT** NRT CommitteeCreated On: **19 Dec 08** By: **DEHB** Daniel E. HromyakPlanned Start: **22 Dec 08** Planned Finish: **22 Dec 08**Completed On: **22 Dec 08 15:26** By: **CNO2** Chris N. Over **805/545-4813**

12/22/2008 15:26:25 Chris N. Over (CNO2) Phone 805/545-4813

Determined to be SL-2 by the 12/22/08 NRT.

Task # 11 See DA for TaskStatus: **TSCO** Task CompletedCode Group: **DE-MRULE** DC Maintenance RuleTask Code: **RFFN** Maint Rule Funct. Failure: NOResponsible: **User Responsible**Work Ctr: **EMB-004** Hromyak Dan - DEHBCreated On: **19 Dec 08** By: **DEHB** Daniel E. HromyakPlanned Start: **19 Dec 08** Planned Finish: **17 Feb 09**Completed On: **22 Dec 08 15:45** By: **BJA1** Beverly J. Jones **805/545-4044**

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.****Task # 12** eng eval brace & demoStatus: **TSCO**

Task Completed

Code Group: **DG-EVAL**

DC General Evaluations

Task Code: **EVAL**

Evaluate the following (See Long Text)

Responsible: **User Responsible**Work Ctr: **EMB-004**Created On: **20 Dec 08**By: **DEHB** Daniel E. HromyakPlanned Start: **26 Feb 09**Planned Finish: **26 Feb 09**Completed On: **26 Feb 09 03:56**By: **GTG5** George T. Gerczak **805/545-6426**

12/20/2008 11:29:01 Daniel E. Hromyak (DEHB) Phone 805/545-4256

Engineering response to request to specify temporary support requirements in task 7 is provided below as well as precautions for demo work. This evaluation supports demo order 60009709.

1) Rig adjacent bus duct support with horizontal brace. This is specified as a prudent measure due to the close proximity of work and unknown impact of water on surface.

CAUTION: Deluge valve assembly has a small bore pilot pipe that runs through adjacent wall. Ensure no movement occurs to prevent damage to this pipe.

2) Rig deluge valve assembly with horizontal and vertical bracing.

NOTE 1: For excavation purposes, the bus duct support is 4'-0" in depth; spt. base is 3' below surface, 3'-0" wide (ref. 438027 Civil foundation plan & 438028 foundation detail).

NOTE 2: Support for deluge drain & pilot line attached to curb has a broken weld. Ensure this is repaired during restoration.

3) Regarding demo work, enter from west after curb removal, avoiding north entry where conduits drop. Curb may be removed as noted in step 12 of order op 60009709-10. It provides no structural function and is not part of bus duct spt noted above. Minor jack hammering of curb concrete is considered part step 13 which states that excavation shall be overseen by a competent person.

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.****Task # 13 SUT21 fire pipe t-mod**

Status: TSCO	Task Completed
Code Group: DE-ENG-T	Diablo Engineering Tasks
Task Code: 0120	Mod Request Authorization Support
Responsible: User Responsible	ELG1 Erban L. Green 805/545-6524
Work Ctr: EIF-007	Green Erban - ELG1
Created On: 22 Dec 08	By: DEHB Daniel E. Hromyak
Planned Start: 24 Dec 08	Planned Finish: 24 Dec 08
Completed On: 24 Dec 08 08:14	By: ELG1 Erban L. Green 805/545-6524

12/22/2008 11:29:25 Daniel E. Hromyak (DEHB) Phone 805/545-4256
Provide T-mod to permit return to service of deluge systems (SUT21, standby SUT11 and Standby SUT12). Permanent fix per existing design is on hold pending materials procurement.

T-mod scope:

Replace 4" cast iron pipe located on civil buried pipe riser off yard loop run G2-8 (438068, detail 18). Pipe is 4' in length per field measurement. Bottom is flanged to 8x4 reducer; top is flanged to deluge assembly pipe. Ref. note 2c on 438145 for new pipe spool and fitting requirements.

Pipe is on supply line to FP-2-FCV-209, deluge valve to SUT21.

Other design drawings:

- 1) Pipe schematic 102018, sheet 2 (C-21) for FCV-209 (run G2)
- 2) Mech pilot line & details 663086, sheet 71 (pipe spec. H1 per note 4)
- 3) 663086-221 & -222, SUT21 deluge pipe and supports.

12/24/2008 08:08:39 Erban L. Green (ELG1) Phone 805/545-6524
Refer to TME 60009807 for the engineering evaluation. Refer to 60009808 for the TMOD install order and 60009809 for the TMOD remove order. 60009807 was approved and completed 12/23/08.

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.****Task # 14** upgrade d727186 material

Status: TSCO	Task Completed
Code Group: DG-EVAL	DC General Evaluations
Task Code: EVAL	Evaluate the following (See Long Text)
Responsible: User Responsible	HRM1 Hamid R. Mirzaei 805/545-4552
Work Ctr: SMT	Procurement- Tech & Quality
Created On: 22 Dec 08	By: ELG1 Erban L. Green
Planned Start: 15 Apr 09	Planned Finish: 15 Apr 09
Completed On: 15 Apr 09 15:12	By: HRM1 Hamid R. Mirzaei 805/545-4552

12/22/2008 14:44:28 Erban L. Green (ELG1) Phone 805/545-6524

.
Evaluate the following material to be used in the fire protection system in support of a TMOD being evaluated via 60009807.

.
The fire protection system is quality class G. This material is quality class N. Provide the necessary evaluation to enable the use of this material in the temporary repair.

.
12/22/2008 15:47:00 Hamid R. Mirzaei (HRM1) Phone 805/545-4552
QM notification 30000811 forwarded to QC and warehouse.
04/15/2009 15:05:35 Hamid R. Mirzaei (HRM1) Phone 805/545-4552
work order is complete

Task # 15 000050135251

Status: TSCO	Task Completed
Code Group: DG-CR	Condition Report
Task Code: OR	Organizational
Responsible: User Responsible	
Work Ctr: SMT	
Created On: 22 Dec 08	By: BJA1 Beverly J. Jones
Planned Start: 22 Dec 08	Planned Finish: 22 Dec 08
Completed On: 22 Dec 08 15:43	By: BJA1 Beverly J. Jones 805/545-4044

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.****Task # 16 Material Spec**

Status: TSCO	Task Completed
Code Group: DG-EVAL	DC General Evaluations
Task Code: EVAL	Evaluate the following (See Long Text)
Responsible: User Responsible	ELG1 Erban L. Green 805/545-6524
Work Ctr: EIF-007	Green Erban - ELG1
Created On: 23 Dec 08	By: GTG5 George T. Gerczak
Planned Start: 23 Dec 08	Planned Finish: 24 Dec 08
Completed On: 24 Dec 08 10:01	By: ELG1 Erban L. Green 805/545-6524

12/23/2008 15:26:25 George T. Gerczak (GTG5) Phone 805/545-6426

Deluge Piping at the 2-1 SUT dwg 663086 sht 222 identifies the above ground piping as pipe spec H1. The spec details flanges 6" and under to be galvanized per ASTM A123. A flange with stock code D75-0630 is galvanized per A153. Is this acceptable. Please advise.

12/24/2008 09:57:19 Erban L. Green (ELG1) Phone 805/545-6524

S/C D75-0630 is a A105 carbon steel forging. It is galvanized in accordance with ASTM A153 instead of ASTM A123. The differences are in the amount of galvanizing that is applied to the specific part. This would have no bearing on the pressure boundary capability of the part at the beginning. The differences in the two methods would affect the in service life of the part if no attention were given it by Maintenance.

Two different parameters are important in the galvanization specifications: coating thickness and weight or mass of zinc. The following table specifies the given values for these two parameters from A 123 and A 153.

	Thickness (mils)	Weight(oz/sq foot)
A123	3.0	1.7
A153 Class B1	3.4	2
A 153 Class B3	2.2	1.3

Inputs to this chart are per A 123 the fitting is Grade 75 for piping and tubing greater than .25 " thick. The B1 class is worst case for A 153 and B3 is the best case. S/C D75-0630 does not indicate which class the flange fits into. From the data on the chart, the A123 galvanizing would be midway between B1 and B3. This will only affect the useful service life of the flange in the outside environment.

If the category of Structural Shapes and Plate is used from A123 the thickness is 3.9 mils and the weight is 2.3 oz / sq foot. These numbers are superior to the A 153 numbers. Therefore the galvanizing per A 153

U-0

Notification: **50123904**Type: **DN** Work Type: **EQPR AANS**Description: **Fire water line break at SU Trans. 2-1.**Order: **60009683****Fire water line break at SU Trans. 2-1.**

is not as good as that provided by A 123. However, this fitting will remain painted and will be protected from the environment and will give satisfactory service in this fire water piping.

Conclusion: The use of S/C D750630 is acceptable for use in piping run G2.

Task # 17 TMOD Monitoring Plan

Status: TSCO	Task Completed
Code Group: DG-EVAL	DC General Evaluations
Task Code: EVAL	Evaluate the following (See Long Text)
Responsible: User Responsible	DEHB Daniel E. Hromyak 805/545-4256
Work Ctr: EMB-004	Hromyak Dan - DEHB
Created On: 24 Dec 08	By: GTG5 George T. Gerczak
Planned Start: 24 Dec 08	Planned Finish: 24 Dec 08
Completed On: 24 Dec 08 11:19	By: DEHB Daniel E. Hromyak 805/545-4256

12/24/2008 10:18:13 George T. Gerczak (GTG5) Phone 805/545-6426

Please provide monitoring plan for TMOD for fire protection piping at SUT 2-1. Reference orders 60009807, 60009808 & 60006809.

12/24/2008 10:24:25 Daniel E. Hromyak (DEHB) Phone 805/545-4256
FP SE will walkdown pipe (1/wk frequency).

60009683-200 provides permanent fix by replacing damaged piping (underground spool and above ground spool pieces) per design requirements. Plan is for t-mod to be installed <7 days as this work is scheduled as emergent.

Task # 18 Perform material analysis

Status: TSCO	Task Completed
Code Group: DG-EVAL	DC General Evaluations
Task Code: EVAL	Evaluate the following (See Long Text)
Responsible: User Responsible	CTB6 Christopher T. 805/545-4581
Work Ctr: ETI	Inservice Inspection
Created On: 05 Jan 09	By: DEHB Daniel E. Hromyak
Planned Start: 05 Jan 09	Planned Finish: 28 Feb 09
Completed On: 02 Feb 09 11:44	By: CTB6 Christopher T. 805/545-4581

U-0

Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

01/05/2009 14:20:46 Daniel E. Hromyak (DEHB) Phone 805/545-4256
Please perform material analysis of failed spool piece. Pipe is shown on 102018-2 (upstream of FP-1-FCV-209), pipe run G2 on 438145, and 6" cast iron pipe spool on detail 18 of civil drawing 438068.

01/05/2009 15:31:58 Daniel E. Hromyak (DEHB) Phone 805/545-4256
Also, perform failure analysis. Correction: pipe is 4", not 6" dia.

02/02/2009 10:52:21 Christopher T. Beard (CTB6) Phone 805/545-4581

The below evaluation documents the-as received condition of the failed firewater pipe and has determined the most likely cause of the failure as being graphitization of the cast iron pipe. Pictures are attached to this task as needed.

ISI received the failed fire pipe spool piece for examination. The piece consists of a 4 foot section of 4" diameter cast iron pipe threaded into 2" shouldered flanges on both ends. (Task-18, Attachment-1)

The pipe is lined with mortar/cement on its interior. This is common for cast-iron pipes designed to carry water. The ID of the pipe appeared in good condition with the cement liner showing no indications of chipping or missing material.

The outside diameter of the pipe was covered in a black coating. The above-grade portion of the pipe was also coated in the typical red-paint of DCPD fire piping. This black coating on the underground portion of the pipe had several holidays accompanied by general corrosion and nodule formations. With the exception of the failure site, no significant pitting or through-wall corrosion was observed.

The failure site consists of an approximately 2.75" by 2.75" circular through-wall hole. The hole is larger in diameter on the outer surface of the pipe and tapers slightly as it nears the cement liner. The hole is located approximately 1 foot below the paint line indicating grade level. (Task-18, Attachment-2)

The surface of the pipe around the failure site looked fairly uniform with no evidence of deformation, smeared metal, gouging, etc.

The pipe was spark tested and had a spark characteristic of cast iron. A small magnet is strongly attracted to the pipe. A piece of the pipe wall near the opening was removed. It was brittle and broke easily. It was noted that the exposed interior of the pipe wall around the hole did

not attract a small magnet. This location also did not appear to develop significant oxide as other exposed portions of the pipe. The use of a small magnet also indicated other regions near the failure site

U-0

Notification: **50123904**

Type: **DN** Work Type: **EQPR AANS**

Description: **Fire water line break at SU Trans. 2-1.**

Order: **60009683**

Fire water line break at SU Trans. 2-1.

which were not as attracted to the magnet as the bulk of the cast iron.

The pipe was sectioned to expose the wall cross section of the areas with limited magnetic attraction. These cross sections revealed areas where the cast iron pipe wall had been reduced to a brittle matrix (Task-18, Attachment-3). This is typical of selective leaching or graphitic corrosion in gray cast iron (Ref: -1). In graphitic corrosion, the iron, which is anodic to graphite, is selectively corroded away leaving behind a brittle structure composed primarily of graphite. This brittle structure does not retain any of the strength or ductility found in the original pipe wall. It appears that this de-alloyed region became large enough to consume the entire thickness of the pipe wall. At this point, only the cement liner and brittle graphite were left to retain the internal pressure of the fire water. Either through a slow leak which grew to wash out the brittle wall or an impact event (pressure pulse), this area failed catastrophically resulting in a large through-wall hole.

In conclusion, the most likely cause for the observed failure is graphitization of the cast iron pipe, which lead to a catastrophic failure. Long term plans for providing cathodic protection for this section of pipe and others in similar applications is prudent in preventing or reducing the occurrence of the this problem.

Evaluation Performed by: Chad C. Sorensen and Chris T. Beard

Refences:

1. "Principles and Prevention of Corrosion", 2nd Edition, Page-324.

DIABLO CANYON POWER PLANT
INTERDEPARTMENTAL ADMINISTRATIVE PROCEDURE

TS1.ID11
Rev. 0
Page 1 of 9

Selective Leaching Degradation Program

INFO ONLY

Effective Date

QUALITY RELATED

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1. SCOPE

- 1.1 This procedure describes the responsibilities of various groups for implementing Diablo Canyon's Selective Leaching of Materials Aging Management Program.
- 1.2 The DCPD Selective Leaching of Materials Aging Management Program manages the loss of material due to selective leaching for brass (copper alloy >15% zinc), gray cast iron, and aluminum-bronze (copper alloy > 8% aluminum) components exposed to raw water, closed-cycle cooling water, secondary water, demineralized water, potable water, plant indoor air, and ventilation atmosphere. Components susceptible to selective leaching are found in the following systems:
 - 06 Auxiliary Steam System
 - 08 Chemical and Volume Control
 - 09 Safety Injection
 - 15 Service Cooling Water
 - 16 Makeup Water
 - 17 Saltwater/ Chlorination
 - 18 Fire Protection
 - 19 Liquid Radwaste
 - 23A Containment HVAC System
 - 23B Auxiliary Building HVAC System
 - 24 Gaseous Radwaste
 - 25 Compressed Air System

-
- 1.3 The Selective Leaching Degradation Program is being implemented as part of License Renewal. Inspections/engineering evaluations are scheduled to occur no earlier than 2015 and no later than 2025.
 - 1.4 This program may be discontinued if one time inspections validate the absence of selective leaching in susceptible components within scope of license renewal.

2. DISCUSSION

- 2.1 The purpose of these inspections and examinations are to ensure the integrity of the components made of gray cast iron, brass (copper alloy > 15% zinc), and aluminum-bronze (copper alloy >8% aluminum) with prolonged exposure to aqueous environments that may lead to selective leaching of one of the metal components.
- 2.2 This procedure provides instructions to perform one-time visual or mechanical examinations of selected components that may be susceptible to selective leaching to determine whether or not loss-of-materials due to selective leaching is occurring, and whether or not the process affects the ability of the components to perform their intended function for the period of extended operation.
- 2.3 The one-time inspection occurs within the ten year period prior to the period of extended operation.

3. DEFINITIONS

- 3.1 10-Years Prior to PEO: The 10-year period prior to the expiration of the current operating licenses (Unit 1: 2014 through 2024; Unit 2: 2015 through 2025).
- 3.2 Closed-Cycle Cooling: Water for component cooling that is treated and monitored for quality under the Closed-Cycle Cooling Water System Aging Management Program.
- 3.3 Demineralized Water: Demineralized or chemically purified water which is the source for water in all clean systems such as the primary or secondary coolant systems. Demineralized water is monitored for quality under the Water Chemistry Aging Management Program and depending on the system; demineralized water may require additional processing.
- 3.4 Intended Function: Systems, structures, or components within the scope of license renewal that perform at least one of these functions:
 - 3.4.1 Safety-related systems, structures, and components which are those relied upon to remain functional during and following design-basis events (as defined in 10 CFR 50.49 (b)(1)) to ensure any of the following functions:
 - a. The integrity of the reactor coolant pressure boundary.
 - b. The capability to shut down the reactor and maintain it in a safe shutdown condition.
 - c. The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to those referred to in § 50.34(a)(1), § 50.67(b)(2), or § 100.11 of this chapter, as applicable.

-
- 3.4.2 All non-safety-related systems, structures, and components whose failure could prevent satisfactory accomplishment of any of the functions identified in 10 CFR 54.4 paragraphs (a)(1)(i), (ii), or (iii).
- 3.2.3 All systems, structures, and components relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulations for fire protection (10 CFR 50.48), environmental qualification (10 CFR 50.49), pressurized thermal shock (10 CFR 50.61), anticipated transients without scram (10 CFR 50.62), and station blackout (10 CFR 50.63).
- 3.5 Period of Extended Operation (PEO): The license renewal period. This time period starts after the expiration of the current operating licenses (Unit 1 in 2024; Unit 2 in 2025) and ends 20 years after the renewed licenses begin (Unit 1 in 2044; Unit 2 in 2045).
- 3.6 Plant Indoor Air: Indoor air on systems with temperatures higher than the dew point, i.e., condensation can occur but only rarely, equipment surfaces are normally dry.
- 3.7 Potable Water: Water treated for drinking or other personal uses.
- 3.8 Raw Water: Untreated fresh, salt, or ground water. Floor drains and containment and auxiliary building sumps may be exposed to a variety of untreated water that is thus classified as raw water, for the determination of aging effects. Raw water may contain contaminants, including oil and boric acid, depending on the location, as well as originally treated water that is not monitored by a chemistry program.
- 3.9 Secondary Water: Steam generator secondary systems water (including condensate, feedwater and steam) that is treated and monitored for quality under the Secondary Water Chemistry Aging Management Program and controlled for protection of steam generators.
- 3.10 Selective Leaching: The preferential removal of one of the alloying elements from a material, which leads to the enrichment of the remaining alloying elements with no noticeable dimension change.
- 3.11 Ventilation Atmosphere: The environment to which the surface of components inside HVAC systems is exposed (e.g., heat exchanger tubes, etc.). Also defined as atmospheric, room, or building air for ventilation systems with temperatures higher than the dew point, i.e. condensation can occur but only rarely, equipment surfaces are normally dry. Condensation on the surfaces of systems with temperatures below the dew point is considered raw water due to the potential for surface contamination.

4. **RESPONSIBILITIES**

- 4.1 Selective Leaching Program Owner is responsible for:
- 4.1.1 Implementing the program.
 - 4.1.2 Evaluating inspection results.
 - 4.1.3 Determining scope expansion and re-inspection frequency if required.
- 4.2 Engineering is responsible for providing acceptance criteria prior to the performance of inspections.
- 4.3 In-service inspection is responsible for developing and performing NDE on selected components.
- 4.4 Maintenance is responsible for performing maintenance activities necessary to provide access to or removal of components requiring inspection.
- 4.5 Maintenance planning is responsible for creating the necessary order/operations at the request of engineering to perform inspections on selected components.
- 4.6 Work control/scheduling is responsible for coordinating inspections with other maintenance activities if available.

5. **INSTRUCTIONS**

5.1 **Scope Identification**

- 5.1.1 The scope of selective leaching susceptibility applies to:
- Gray cast iron
 - Brass (copper-zinc alloy >15% zinc)
 - Aluminum-bronze (copper alloy >8% aluminum)
 - Components in wetted environments.
- a. These components include piping, pump casings, sprinkler heads, valve bodies, and heat exchanger components.
 - b. Research to date has not identified a limiting condition regarding material or environment for selective leaching; therefore, components of all susceptible materials in all wetted environments should be used in the sample population.

5.2 **Sample Size**

- 5.2.1 Inspection samples should be chosen from each system population with the system/component/material/environment list found in Attachment 1.

5.3 Inspection Requirements

5.3.1 Aging Effects Detection

- a. The selective leaching process involves the preferential removal of one of the alloying elements from the material, which leads to the enrichment of the remaining alloying elements. Examples of the process include:
 - Dezincification (loss of zinc from brass)
 - De-alloying (loss of aluminum from aluminum-bronze)
 - Graphitization (removal of iron from gray cast iron)

5.3.2 Visual or mechanical inspections should be conducted for each system within scope of this procedure.

5.3.3 Inspection Techniques

- a. Selective leaching inspections include initial visual and mechanical inspections of selected components within each of the susceptible system, material, or environment combinations to detect component degradation prior to loss of their intended functions.
- b. When visual or mechanical inspections reveal potential graphitization, dezincification, or de-alloying, the component may be subjected to an engineering evaluation that may include microscopic examination

5.3.4 Visual or Mechanical Inspections

<p><u>NOTE:</u> Selective leaching generally does not cause changes in dimensions and is difficult to detect.</p>
--

- a. Visual or mechanical inspections may be used for providing preliminary indications of:
 - Dezincification in brass (copper alloy >15% zinc) components.
 - Indications of de-alloying in aluminum-bronze (copper alloy >8% aluminum) components.
 - Indications of graphitization in gray cast iron components.
- b. Appropriate visual or mechanical techniques should be utilized to detect selective leaching based on the line of the selected piping/component.
- c. Visual indications of graphitization, dezincification, or de-alloying may include rust, pores/voids, existence of graphite, or superficial corrosion.
- d. Mechanical indications include flaking, weakness or the collapsing of the material when subject to tapping or scraping by a suitable metal probe.

5.3.5 Microstructure Examination

- a. A microstructure examination of a component should be performed at the direction of engineering when indications of dezincification, de-alloying, or graphitization are found initially.
- b. The examination should focus on the inside surfaces of the selected set of components or on the outside surfaces for buried components exposed to groundwater.
- c. Suspect components shall be identified by engineering and shall be removed from service by Maintenance and sent to an outside laboratory for analysis.
- d. Subsequent engineering evaluations shall be performed following receipt of the specific component microstructure exam results.

5.4 Acceptance Criteria

- 5.4.1 Initial visual or mechanical indications of graphitization, dezincification, and dealuminification shall be documented in a notification to allow for an engineering evaluation.
- 5.4.2 Components which violate established acceptance criteria specific to the component shall be considered unacceptable, unless further engineering evaluation documents acceptability.

5.5 Engineering Evaluation

- 5.5.1 The engineering evaluation should evaluate results of the initial inspection to determine whether or not selective leaching has occurred.
- 5.5.2 If the results of the initial inspection are inconclusive, the component may need more extensive NDE or removed from service for metallurgical examination of the suspect area.
- 5.5.3 Based on the results from the initial inspection or metallurgical examination engineering should evaluate the remaining material thickness against established acceptance criteria.
- 5.5.4 Components that are experiencing selective leaching and are found acceptable by engineering should have either of the following documented:
 - a. Document the basis for component acceptability to the end of period of extended operation.
 - b. Document the inspection frequency or specify replacement date to ensure component minimum wall thickness is not violated while in service.

5.5.5 Components that are experiencing selective leaching and were replaced as a result of an unacceptable condition or the need for metallurgical evaluation should have either of the following documented:

- a. Document the basis for component acceptability to the end of the period of extended operation.
- b. Document the inspection frequency or specify replacement date to ensure component minimum wall thickness is not violated while in service.

5.6 Scope Expansion

5.6.1 Expanded visual or mechanical inspections shall occur if selective leaching is identified.

5.6.2 Scope expansion may occur in the outage selective leaching was identified or following outages based on the severity of the occurrence. The selective leaching program owner should determine timeliness of the scope expansion.

5.6.3 Sample sizes should continue to be expanded until all occurrences of selective leaching have been identified or the entire population of that system, material, and environment combination has been examined.

6. **RECORDS**

None

7. **REFERENCES**

- 7.1 NUREG-1801, "Generic Aging Lessons Learned," Nuclear Regulatory Commission, Rev. 1, September 2005
- 7.2 XI.M33, "License Renewal Feasibility Study Evaluation Report - Selective Leaching," Rev. 2
- 7.3 PCD

Sample Size

Attachment 1: Page 1 of 1

	Number of Components	Sample Size	Component Total	Sample Component Total
1. <u>Cast Iron (Gray Cast Iron)/Closed Cycle Cooling Water</u>			2	1
a. Service Cooling Water System	2	1		
2. <u>Cast Iron (Gray Cast Iron)/Demineralized Water</u>			17	2
a. Makeup Water System	17	2 (1 per unit)		
3. <u>Cast Iron (Gray Cast Iron)/Raw Water</u>			65	6
a. Fire Protection System	56	4 (2 per unit)		
b. Makeup Water System	9	2 (1 per unit)		
4. <u>Cast Iron (Gray Cast Iron)/Secondary Water</u>				
a. Containment HVAC System	2	2 1 per unit)	2	1
5. <u>Copper Alloy (> 15% Zinc)/Closed Cycle Cooling Water</u>			41	7
a. CVCS	20	2 (1 per unit)		
b. Safety Injection System	4	2 (1 per unit)		
c. Containment HVAC System	2	1		
d. Auxiliary Building HVAC System	15	2 (1 per unit)		
6. <u>Copper Alloy (> 15% Zinc)/Demineralized Water</u>			9	4
a. CVCS	5	2 (1 per unit)		
b. Liquid Radwaste System	3	1		
c. Auxiliary Building HVAC System	1	1		
7. <u>Copper Alloy (> 15% Zinc)/Raw Water</u>			18	6
a. Auxiliary Steam System	4	1		
b. Fire Protection System	7	2 (1 per unit)		
c. Liquid Radwaste System	1	1		
d. Gaseous Radwaste System	6	2 (1 per unit)		
8. <u>Copper Alloy (> 15% Zinc)/Plant Indoor Air</u>			62	6
a. Gaseous Radwaste System	6	2 (1 per unit)		
b. Compressed Air System	56	4 (2 per unit)		
9. <u>Copper Alloy (> 15% Zinc)/Potable Water</u>			3	1
a. Auxiliary Building HVAC System	3	1		
10. <u>Copper Alloy (Aluminum > 8%)/Raw Water</u>			28	2
a. Saltwater/Chlorination System	28	2 (1 per unit)		
Total Number of Components			247	
Total Number of Components to Inspect				37

A/R NUMBER : A0350059A/R AGE: 00726A/R STATUS : HISTRYA/R TYPE : AT OEASTATUS DATE : 04SEP96REQST GROUP: NOSRDATE REQUIRED: 31DEC96

SUBGROUP :

PRINT DATE : 28OCT10REQST ID : BAL2CONTACT: MIKE MC COYAT: 3514A/R SUMMARY: EVALUATION OF NRC IEN 94-59, AL-BRONZE DEALLOYING

* BAL2 09SEP94
ISEGLOG 94-331 BAL2 09SEP94
* BAL2 09SEP94
THIS AR IS FOR TRACKING THE EVALUATION OF IEN 94-59, BAL2 09SEP94
"ACCELERATED DEALLOYING OF CAST ALUMINUM BRONZE VALVES BAL2 09SEP94
CAUSED BY MICROBIOLOGICALLY INDUCED CORROSION." BAL2 09SEP94
BAL2 09SEP94
SURREY NOTED VARYING DEGREES OF CORROSION ON TWENTY-TWO BAL2 09SEP94
JAMESBURY CAST ALUMINUM-BRONZE BALL VALVES (1.5 & 2 INCH) BAL2 09SEP94
MAXIMUM OBSERVED LEAKAGE WAS A FEW DROPS PER HOUR, AND BAL2 09SEP94
WAS THROUGH THE VALVE BODY. BAL2 09SEP94
BAL2 09SEP94
THE ALUMINUM-RICH PHASES HAD BEEN LEACHED OUT. THE OUTER BAL2 09SEP94
CORROSION CONTAINED A LARGE PERCENTAGE OF ALUMINUM. THE BAL2 09SEP94
LOCATION OF THE LEAK APPEARED TO COINCIDE WITH A BAL2 09SEP94
CORROSION NODULE. BACTERIAL ANALYSIS OF THE CORROSION BAL2 09SEP94
NODULE REVEALED SEVERAL TYPES, E.G., SULFATE-REDUCING AND BAL2 09SEP94
ACID-PRODUCING. SURREY CONCLUDED THAT ONCE A NODULE WAS BAL2 09SEP94
FORMED BY THE BACTERIA, AN ACIDIC CONDITON WAS CREATED BAL2 09SEP94
UNDER THE NODULE AND THIS RESULTED IN AN ACCELERATED RATE BAL2 09SEP94
OF CORROSION / DEALLOYING OF THE VALVE MATERIAL. BAL2 09SEP94
BAL2 09SEP94
VALVES HAD BEEN IN SERVICE FOR SEVEN YEARS IN A BRACKISH BAL2 09SEP94
WATER SYSTEM. FLOW VELOCITY CAN BE AS LOW AS 2 TO 3 BAL2 09SEP94
FT/SEC. FLOW BELOW 5 FT/SEC LENDS TO THE POTENTIAL FOR BAL2 09SEP94
FOULING WHICH CAN PROMOTE FORMATION OF MICROBIOLOGICALLY BAL2 09SEP94
INDUCED CORROSION NODULES. BAL2 09SEP94
BAL2 09SEP94
VALVES WERE MADE OF CAST ALUMINUM-BRONZE ALLOY C95400. BAL2 09SEP94
CHEMICAL ANALYSIS SHOWED COMPOSITION MET ASTM SPEC B-148. BAL2 09SEP94
B-148 CONTAINS NOMINAL 11-PERCENT ALUMINUM. AL-BRONZE BAL2 09SEP94
ALLOYS WITH MORE THAN 9 PERCENT REQUIRE HEAT TREATMENT BAL2 09SEP94
FOR OPTIMUM CORROSION RESISTANCE. ASTM B-148 DOESN'T BAL2 09SEP94
REQUIRE HEAT TREATMENT, THUS AS-CAST MATERIAL ISN'T BAL2 09SEP94
OPTIMAL TO RESIST CORROSION AND OFTEN OCCURS BY DEALLOY'N BAL2 09SEP94
BAL2 09SEP94
DEALLOYING OF ALUMINUM-BRONZE VALVE BODY REDUCES THE BAL2 09SEP94
TENSILE STRENGTH AND THE TOUGHNESS OF THE MATERIAL AND BAL2 09SEP94
INCREASES THE SUSCEPTIBILITY TO TRANSIENT AND IMPACT BAL2 09SEP94
LOADING. BAL2 09SEP94
***** BAL2 09SEP94
THIS WAS PREVIOUSLY REPORTED VIA INPO NETWORK OE-6317 IN BAL2 09SEP94
NOV 1993. BAL2 09SEP94
* BAL2 09SEP94
INITIAL RAMIS SEARCH OF PIMS COMPONENT DATA FOUND THE BAL2 09SEP94
FOLLOWING AL-BRONZE B-148, "Q" VALVE BODIES: BAL2 09SEP94
BAL2 09SEP94

A/R NUMBER : A0350059A/R AGE: 00726A/R STATUS : HISTRYA/R TYPE : AT OEASTATUS DATE : 04SEP96REQST GROUP: NOSRDATE REQUIRED: 31DEC96

SUBGROUP :

PRINT DATE : 28OCT10REQST ID : BAL2CONTACT: MIKE MC COYAT: 3514

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SW-1-170 ASW PP 1-1 DISCH VACUUM RELIEF CHECK VLV (L/H) BAL2 09SEP94
SW-2-170 ASW PP 2-1 " " " " " " BAL2 09SEP94
SW-1-185 ASW 1-1 HDR PS-185A BAL2 09SEP94
SW-2-185 ASW 2-1 " " BAL2 09SEP94
SW-1-186 ASW 1-2 HDR PS-186A BAL2 09SEP94
SW-2-186 ASW 2-2 " " BAL2 09SEP94
SW-1-300 ASW PP 1-2 DISCH LINE VACUUM RELIEF ISO VLV BAL2 09SEP94
SW-2-300 ASW PP 2-2 " " " " " " BAL2 09SEP94
SW-1-301 ASW PP 1-2 DISCH VACUUM RELIEF CHECK VLV (L/H) BAL2 09SEP94
SW-2-301 ASW PP 2-2 " " " " " (R/H) BAL2 09SEP94
SW-1-302 ASW PP 1-2 DISCH LINE VACUUM RELIEF ISO VLV BAL2 09SEP94
SW-2-302 ASW PP 2-2 " " " " " " BAL2 09SEP94
SW-1-303 ASW PP 1-2 DISCH VACUUM RELIEF CHECK VLV (L/H) BAL2 09SEP94
SW-2-303 ASW PP 2-2 " " " " " (R/H) BAL2 09SEP94
SW-1-33 ASW PP 1-1 DISCH LINE VACUUM RELIEF ISO VLV BAL2 09SEP94
SW-2-33 ASW PP 2-1 " " " " " " BAL2 09SEP94
SW-1-34 ASW PP 1-1 DISCH VACUUM RELIEF CHECK VALVE (R/H) BAL2 09SEP94
SW-2-34 ASW PP 2-1 " " " " " (L/H) BAL2 09SEP94
SW-1-452 ASW PP 1-1 DISCH PI-452 BAL2 09SEP94
SW-2-452 ASW PP 2-1 " " BAL2 09SEP94
SW-1-71 ASW PP 1-1 DISCH LINE VACUUM RELIEF ISO VLV BAL2 09SEP94
SW-2-450 ASW PP 2-1 " " " " " " BAL2 09SEP94
SW-1-864 ASW PP 1-1 DISCH FX 2 ISO BAL2 09SEP94
SW-2-864 ASW PP 2-1 " " " BAL2 09SEP94
SW-1-865 ASW PP 1-2 DISCH FX 8 ISO BAL2 09SEP94
SW-2-865 ASW PP 2-2 " " " BAL2 09SEP94
SW-1-454 ASW PP 1-2 DISCH PI-454 BAL2 09SEP94
SW-2-201 ASW PP 2-2 DISCH CHECK VALVE BAL2 09SEP94
. BAL2 09SEP94
NOTE: LIST MAY NOT BE COMPLETE SINCE SEARCH LOOKS IN TECH BAL2 09SEP94
NOTES FOR "BODY". IF "BODY" ISN'T IN TECH NOTES, OR IF BAL2 09SEP94
TECH NOTES HAVEN'T BEEN INCLUDED, SEARCH WILL BE BAL2 09SEP94
INCOMPLETE. BAL2 09SEP94
*** BAL2 09SEP94
DISCUSSED WITH B. LOCONTE, NO IMMEDIATE DCPD IMPACT HAS JEF3 26SEP94
BEEN IDENTIFIED. NO OE REQUIRED TO EVALUATE INDUSTRY JEF3 26SEP94
OCCURRENCE. JEF3 26SEP94
. SCK3 01FEB96
PER 1996 ISEG GOALS, ONE HALF OF THE OUTSTANDING SCK3 01FEB96
1994 ISEGLOGS IN "EVAL" STATUS WILL BE RESOLVED SCK3 01FEB96
(EVALUATION COMPLETE) BY 12/31/96. AS SUCH, THE SCK3 01FEB96
DUE DATE FOR THIS AR IS BEING UPDATED (CHANGED) SCK3 01FEB96
FROM 09/09/95 TO 12/31/96. SCK3 01FEB96
. SCK3 01FEB96
THE FOLLOWING CLOSURE PACKAGE WAS DEVELOPED TO DOCUMENT MEM6 28AUG96
OUR RESPONSE TO IEN 94-59 & OE-6317: MEM6 28AUG96
. MEM6 28AUG96
ISSUE: A NUMBER OF SERVICE WATER JAMESBURY CAST MEM6 28AUG96
ALUMINUM-BRONZE BALL VALVES (1.5 TO 2 INCH) WERE SEEPING MEM6 28AUG96

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A/R NUMBER : A0350059A/R AGE: 00726A/R STATUS : HISTRYA/R TYPE : AT OEASTATUS DATE : 04SEP96REQST GROUP: NOSRDATE REQUIRED: 31DEC96

SUBGROUP :

PRINT DATE : 28OCT10REQST ID : BAL2CONTACT: MIKE MC COYAT: 3514

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WATER THROUGH THE VALVE BODY AT SURRY POWER STATION. MEM6 28AUG96
THE CAUSE WAS DETERMINED TO BE DEALLOYING OF THE VALVE MEM6 28AUG96
BODY MATERIALS INITIATED BY MICROBIOLOGICAL INDUCED MEM6 28AUG96
CORROSION (MIC) CAUSED BY A NUMBER OF FACTORS, MEM6 28AUG96
INCLUDING: MEM6 28AUG96

1) WARM, LOW FLOW OR STAGNANT WATER CONDITIONS MEM6 28AUG96

2) BRACKISH WATER MEM6 28AUG96

3) THE USE OF ALUMINUM-BRONZE ALLOY ASTM B148 MEM6 28AUG96
TYPE 954 WITHOUT HEAT TREATMENT FOR OPTIMUM MEM6 28AUG96
CORROSION RESISTANCE. MEM6 28AUG96

THE VALVES HAD BEEN INSTALLED FOR 7 YEARS. MEM6 28AUG96

RESPONSE: AT DCPD WE HAVE A NUMBER OF ALUMINUM-BRONZE MEM6 28AUG96
VALVES USED IN SALTWATER SYSTEMS. SEE ISEGLOG 94-331 MEM6 28AUG96
RAMIS ANALYSIS FOR A LISTING OF VALVES WITH ALUMINUM- MEM6 28AUG96
BRONZE VALVE BODIES. DISCUSSIONS WITH KERSI DALAL MEM6 28AUG96
(PIPING & MECHANICAL COMPONENTS) AND RAVI CHHATRE (TES- MEM6 28AUG96
MIC) INDICATE THAT OUR EXPERIENCE WITH THESE VALVES IN MEM6 28AUG96
OVER 10 YEARS OF OPERATION HAS NOT INDICATED A PROBLEM MEM6 28AUG96
OR CONCERN WITH MIC. THIS MAY BE REASONED FROM THE FACT MEM6 28AUG96
THAT WE BIOCIDED OUR CLOSED SALTWATER SYSTEMS. THE ASW MEM6 28AUG96
SYSTEM IS CONTINUOUSLY CHLORINATED AND THREE CLOSED MEM6 28AUG96
COOLING WATER SYSTEMS (CCW, ICW AND SCW) HAVE BEEN THE MEM6 28AUG96
SUBJECT OF A MIC STUDY BY TES. CURRENTLY 8 CLOSED MEM6 28AUG96
COOLING WATER SYSTEMS ARE BEING SURVEYED BY TES MEM6 28AUG96
CONCERNING THE PRESENCE OF MIC. HENCE, ACTIONS ARE MEM6 28AUG96
ONGOING TO TRACK AND CONTINUOUSLY SURVEY THE GROWTH OF MEM6 28AUG96
MIC IN OUR COOLING WATER SYSTEMS. MEM6 28AUG96

SINCE THE AUX. SALTWATER SYSTEM (ASW) IS VERY SIMILAR TO MEM6 28AUG96
THE SYSTEM IDENTIFIED AT SURRY, I EVALUATED THE VALVES MEM6 28AUG96
IN THAT SYSTEM TO IDENTIFY VALVES THAT MAY BE MEM6 28AUG96
SUSCEPTIBLE TO MIC INDUCED CORROSION. THE FOLLOWING MEM6 28AUG96
VALVES ARE ALUMINUM-BRONZE (AL-BZ) INSTALLED IN LOW FLOW MEM6 28AUG96
OR NO FLOW AREAS OF THE ASW SYSTEM: MEM6 28AUG96

1-170, 185, 186A, 300, 301, 302, 303, 33, 34, & 71 MEM6 28AUG96

OF THESE VALVES, IT IS NOTED THAT 1-301, 303, 170 & 34 MEM6 28AUG96
ARE CHECK VALVES THAT ARE PERIODICALLY INSPECTED FOR MEM6 28AUG96
SIGNS OF CORROSION AND FREEDOM OF OPERATION. MEM6 28AUG96

SEE ISEGLOG 94-331 TABLE ENTITLED "AUX. SALTWATER SYSTEM MEM6 28AUG96
AL-BZ VALVE EVALUATION," FOR BOTH UNITS. THIS DATA, MEM6 28AUG96
GLEANED FROM PIMS, INDICATES THAT THESE VALVES WERE MEM6 28AUG96
INSTALLED IN 1984 AND HAVE BEEN IN SERVICE FOR 11 OR 12 MEM6 28AUG96
YEARS. TO DATE, WITH THE EXCEPTION OF 1(2)-303, THESE MEM6 28AUG96

A/R NUMBER : A0350059A/R AGE: 00726A/R STATUS : HISTRYA/R TYPE : AT OEASTATUS DATE : 04SEP96REQST GROUP: NOSRDATE REQUIRED: 31DEC96

SUBGROUP : _____

PRINT DATE : 28OCT10REQST ID : BAL2CONTACT: MIKE MC COYAT: 3514

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VALVES HAVE HAD SATISFACTORY PERFORMANCE WITH RESPECT TO MEM6 28AUG96
VALVE BODY CORROSION. VALVE 1-303 WAS REPLACED IN 1989 MEM6 28AUG96
DUE TO EXCESSIVE VALVE BODY CORROSION. VALVE 2-303 WAS MEM6 28AUG96
REPLACED IN 1990 DUE TO A BENT VALVE STEM. IT WAS NOTED MEM6 28AUG96
AT THAT TIME THAT SOME CORROSION WAS PRESENT WITH MEM6 28AUG96
NODES, INDICATING POSSIBLE MIC INDUCED ACTIVITY. MEM6 28AUG96

CONCLUSION: MEM6 28AUG96

OF THE 10 VALVES STUDIED, ONLY 1 HAS HAD PROBLEMS WITH MEM6 28AUG96
CORROSION THAT MAY BE ATTRIBUTED TO MIC. SINCE THESE MEM6 28AUG96
VALVES ARE PRESENT WITHIN A SYSTEM THAT HAS PERIODIC MEM6 28AUG96
INSPECTIONS OF CERTAIN KEY AFFECTED VALVES AND SINCE NO MEM6 28AUG96
DEFINITE CORROSION PROBLEMS TO DATE CAN BE ATTRIBUTED TO MEM6 28AUG96
MIC, IT IS CONCLUDED THAT THE PRESENT PROGRAM OF MEM6 28AUG96
BIOCIDE, INSPECTION, AND CLEANING IS MAINTAINING OUR MEM6 28AUG96
VALVES OPERABLE WHETHER OR NOT MIC IS PRESENT. IT IS MEM6 28AUG96
RECOMMENDED THAT TES CONTINUE THEIR SURVEY OF CORROSION MEM6 28AUG96
PROBLEMS IN COOLING WATER SYSTEMS. THIS EVALUATION OF MEM6 28AUG96
THE IE INFORMATION NOTICE WILL BE DISSEMINATED TO THE MEM6 28AUG96
SYSTEM ENGINEER, THE VALVE ENGINEER, AND TES FOR THEIR MEM6 28AUG96
INFORMATION AND FURTHER CONSIDERATION IN THE EVENT THAT MEM6 28AUG96
FUTURE INSPECTIONS DISCOVER ACCELERATED CORROSION CAUSED MEM6 28AUG96
BY MIC. NO FURTHER ACTIONS ARE REQUIRED. MEM6 28AUG96

THE SUBJECT CLOSURE PACKAGE WAS CONCURRED WITH BY BOB MEM6 28AUG96
NANNINGA (VALVE ENGINEER), JOE ANASTASIO (ASW SYSTEM EGR) MEM6 28AUG96
AND, FINALLY SHEILA ALLEN (BOP DIRECTOR - ACTING). NO MEM6 28AUG96
FURTHER ACTIONS ARE REQUIRED AND THIS A/R MAY BE CLOSED. MEM6 28AUG96

MUC: F FEG: 0 17 1P1 COMP ID: _____FEG DESC : ASW PP # 1

AR TAG:

NO EQUIP TAGHAVE TAG CONSIDERATIONS BEEN ADDRESSED? : VERIFIED BY :

===== REVIEW AND ASSIGNMENT =====

POTENTIALLY REPORTABLE? : N COMPONENT UNAVAILABLE: N SFM NOTIFIED : N
PROBLEM CATEGORY : LEVEL OF DEGRADATION : PRIORITY : 4 000
REQUIRED DUE DATE : 31DEC96 SCHEDULE CATEGORY : CTD: X WMI: M1
RESPONSIBLE GROUP : NOSR SUBGROUP: ID: INFO: MC COY, MIKE

===== QUALITY PROBLEM CHECKLIST =====

QA CLASS : Q N/A
QUALITY PROB: N JEF3 26SEP94
QP RESP ORG : N/A QP DUE DATE: N/A
IND VERIFIER: DATE:

PG AND E

*** ACTION REQUEST ***

PAGE: 05

A/R NUMBER : A0350059A/R AGE: 00726A/R STATUS : HISTRYA/R TYPE : AT OEASTATUS DATE : 04SEP96REQST GROUP: NOSRDATE REQUIRED: 31DEC96SUBGROUP : PRINT DATE : 28OCT10REQST ID : BAL2CONTACT: MIKE MC COYAT: 3514

===== PROGRAM REVIEWS =====

MRFF : <u>N</u>	REG DOC CD: <u>IEIN 94-59</u>	PARENT AR: <u></u>
POA : <u>NA</u>	OTHER INFO: <u>SREF 94-331</u>	LINK? : <u>-</u>
SUPV GR: <u>DC</u>	MTE ID : <u></u>	SCHED : <u>-</u>
RT NBR : <u></u>	OUTAGE : <u></u> RVWR: <u>N/A</u>	OEA : <u>E</u>
DCP NBR: <u>000000</u>	INTERNAL ORDER: <u></u>	PROJ : <u></u>

===== PROCESS ROUTING =====

	ID	NAME	PHONE	PAGER	DATE	TIME
INITIATED BY :	<u>BAL2</u>	<u>LOCONTE, BA</u>	<u>4042</u>	<u></u>	<u>09SEP94</u>	<u></u>
SUPV REVIEW BY:	<u>KHB1</u>	<u>BYCH, KH</u>	<u>4241</u>	<u>4527</u>	<u>4241</u>	<u>13SEP94</u>
ROUTED BY :	<u>KHB1</u>	<u>BYCH, KH</u>	<u>4241</u>	<u>4527</u>	<u>4241</u>	<u>13SEP94</u>
ASIGN RESP BY:	<u></u>	<u></u>	<u></u>	<u></u>	<u>N/A</u>	<u></u>
FIELD CMPLT BY:	<u></u>	<u></u>	<u></u>	<u></u>	<u>N/A</u>	<u></u>
COMPLETED BY :	<u>SCK3</u>	<u>KETELSEN, S.C.</u>	<u>4564</u>	<u></u>	<u>4564</u>	<u>04SEP96</u>

WHEN AR GOES TO HISTRY STATUS, NOTIFY:

=====END OF ACTION REQUEST=====

PG AND E

*** ACTION REQUEST ***

PAGE: 01

A/R NUMBER : A0431200

A/R AGE: 00201

A/R STATUS : HISTRY

A/R TYPE : AT EQPR

STATUS DATE : 18NOV97

REQST GROUP: PGMA

DATE REQUIRED: 15NOV97

SUBGROUP :

PRINT DATE : 28OCT10

REQST ID : RMN1

CONTACT: NANNINGA, R

AT: 3348

A/R SUMMARY: SW-1-303 - FAILED STP V-18 INSPECTION

ASW VACUUM BREAKER SW-1-303 FAILED STP V-18 INSPECTION RMN1 01MAY97
CRITERIA - UNABLE TO STROKE FULL STROKE WITHOUT BEING RMN1 01MAY97
FORCED. VALVE DISC STROKED SMOOTHLY OFF SEAT BUT RMN1 01MAY97
ENCOUNTERED RESISTANCE ABOUT 1/4" OPEN. I WAS ABLE TO RMN1 01MAY97
FORCE IT OPEN BY REPEATED CYCLING AGAINST RESISTANCE RMN1 01MAY97
UNTIL IT BROKE FREE. VALVE SHOULD BE REMOVED AND FURTHER RMN1 01MAY97
DISASSEMBLED IN THE SHOP TO DETERMINE THE CAUSE OF THE RMN1 01MAY97
RESISTANCE. RMN1 01MAY97
FPS1 02MAY97
THIS A/R IS TO DOCUMENT THE AS-FOUND CONDITION OF THE FPS1 02MAY97
VALVE. R0160328 EXISTS TO REBUILD THIS VALVE. FPS1 02MAY97
FPS1 02MAY97
KXS7 02MAY97
THE ISSUE/EVENT DESCRIBED IN THIS AR HAS BEEN REVIEWED BY KXS7 02MAY97
THE DAILY AR REVIEW TEAM (DART) AND DETERMINED TO BE A KXS7 02MAY97
QUALITY PROBLEM PER OM7.ID1. IF ADDITIONAL INFORMATION KXS7 02MAY97
IS DISCOVERED THAT WOULD AFFECT THE QUALITY PROBLEM KXS7 02MAY97
DETERMINATION, CONTACT YOUR DEPARTMENT DART REPRESENTATIVE. KXS7 02MAY97
SET QP FIELD = A. KXS7 02MAY97
RMN1 03MAY97
REMOVED COUNTERWEIGHT COVER. AS COVER WAS BEING REMOVED, RMN1 03MAY97
APPROX 1 PINT OF WATER RAN OUT ON THE TABLE. THERE WAS RMN1 03MAY97
CLEAR EVIDENCE THAT THE HOUSING WAS 1/2 FULL OF SALT RMN1 03MAY97
WATER FOR AN EXTENDED PERIOD OF TIME. THERE WAS A HEAVY RMN1 03MAY97
CORROSION LAYER AT THE AIR-WATER INTERFACE THAT CREATED A RMN1 03MAY97
BARRIER WHICH PREVENTED THE COUNTERWEIGHT FROM ROTATING RMN1 03MAY97
MORE THAN 5 DEGREES. IT REQUIRED REPEATED PULLS ON THE RMN1 03MAY97
DISC/HANGER TO BREAK THRU THIS BARRIER. LOOSE MATERIAL RMN1 03MAY97
FROM THE BARRIER WAS FOUND AT THE BOTTOM OF THE HOUSING RMN1 03MAY97
AFTER COVER REMOVAL. ISI TOOK DIGITAL PICTURES OF THE RMN1 03MAY97
EVIDENCE FOR FUTURE EVALUATION. SAMPLE OF MATERIAL SAVED RMN1 03MAY97
FOR TES LABORATORY EVALUATION. RMN1 03MAY97
RMN1 03MAY97
MRFF = Y JEA3 07MAY97
W/O R0160328 COMPLETE JNM1 13MAY97
JNM1 13MAY97
AR REASSIGND TO SYSTEM ENGINEER FOR CLOSURE PENDING JNM1 13MAY97
COMPLETION OF A/E 01 MRFF ANALYSIS JNM1 13MAY97
JNM1 13MAY97
THE SISTER VALVE ON THE OTHER TRAIN, SW-1-170, WAS FOUND RMN1 13MAY97
TODAY WITH VERY SIMILAR DEPOSITS IN THE COUNTERWEIGHT RMN1 13MAY97
HOUSING. UNLIKE, SW-303, HOWEVER, SW-170 STROKED FEELY. RMN1 13MAY97
APPARENTLY, IT HAD BEEN EXERCISED RECENTLY, PROBABLY RMN1 13MAY97
DURING AN OPERATIONAL TRANSIENT AND DID NOT HAVE AN RMN1 13MAY97
INTACT DEPOSIT/CORROSION LAYER IN THE COUNTERWEIGHT RMN1 13MAY97
HOUSING PRIOR TO MY HAND-STROKING IT. NO NEW AR NEEDED RMN1 13MAY97
FOR SW-170. REFERENCE R0160319-01. RMN1 13MAY97

PG AND E

*** ACTION REQUEST ***

PAGE: 02

A/R NUMBER : A0431200A/R AGE: 00201A/R STATUS : HISTRYA/R TYPE : AT EQPRSTATUS DATE : 18NOV97REQST GROUP: PGMADATE REQUIRED: 15NOV97SUBGROUP : PRINT DATE : 28OCT10REQST ID : RMN1CONTACT: NANNINGA, RAT: 3348

THE VALVE HAS BEEN REPAIRD AND IS OPERABLE FOR RESTART. JEA3 20MAY97
THE INVESTIGATION WILL TAKE SEVERAL MONTHS, BUT THE JEA3 20MAY97
PROBLEM APPEARS TO BE DEPOSITION IN THE COUNTERWEIGHT JEA3 20MAY97
CHAMBER. NOTE, THE REDUNDANT VALVE WAS NOT DEGRADED JEA3 20MAY97
SO SYSTEM FUNCTION WAS PRESERVED, PLEASE REMOVE FROM JEA3 20MAY97
RFR LIST. JEA3 20MAY97
JLP4 23MAY97
CHANGED DUE DATE TO 9/97 TO ALLOW INVESTIGATION. JLP4 23MAY97
IMMEDIATE CORRECTIVE ACTIONS COMPLETED. JLP4 23MAY97
CHANGED AR TYPE TO "AT EQPR" FROM "CM EQPR". JLP4 23MAY97
JLP4 23MAY97
LLF3 16JUN97
THIS EVENT CLASSIFIED AS MAINTENANCE PREVENTABLE SINCE LLF3 16JUN97
THE EXISTING PM PROGRAM DID NOT PREVENT THE SALTWATER LLF3 16JUN97
LEAKAGE. LLF3 16JUN97
JEA3 08OCT97
NO FURTHER ACTIONS THAT I CAN SEE, ROUTED TO RMN FOR JEA3 08OCT97
DISPOSITION. JEA3 08OCT97
JEA3 08OCT97
RMN1 18NOV97
REFER TO AE 2 FOR PLANS TO POLISH COUNTERWEIGHT HOUSING RMN1 18NOV97
INTERIOR TO SLOW THE DEALLOYING PROCESS ON THESE VALVES RMN1 18NOV97
AS THEY AGE. WORK ORDERS FOR THE 4 WAREHOUSE SPARES PLUS RMN1 18NOV97
THE 4 UNIT-2 VALVES INCORPORATE THE POLISHING STEPS IN RMN1 18NOV97
THEM. THE VALVES REMOVED FROM UNIT-2 DURING 2R8 WILL BE RMN1 18NOV97
REWORKED AND INSTALLED IN UNIT-1 DURING 1R9. RMN1 18NOV97
THIS AR CAN BE CLOSED. RMN1 18NOV97

MUC: C FEG: 1 17 2P2 COMP ID: 1 17 P V SW-1-303COMP DESC : 1-2 ASW PUMP DISCH VACUUM RELIEF CHECK VALVE (L

AR TAG:

NO EQUIP TAGHAVE TAG CONSIDERATIONS BEEN ADDRESSED? : _ VERIFIED BY : _____

===== REVIEW AND ASSIGNMENT =====

POTENTIALLY REPORTABLE?: N COMPONENT UNAVAILABLE: N SFM NOTIFIED : N
PROBLEM CATEGORY : _____ LEVEL OF DEGRADATION : _____ PRIORITY : 3 000
REQUIRED DUE DATE : 15NOV97 SCHEDULE CATEGORY : _____ CTD: X WMI: M1
RESPONSIBLE GROUP : PGMA SUBGROUP: _____ ID: _____ INFO: RMN1

===== QUALITY PROBLEM CHECKLIST =====

QA CLASS : Q N/A
QUALITY PROB: C LLF3 18SEP97
QP RESP ORG : PGMO JLP4 23MAY97 QP DUE DATE: 20SEP97
IND VERIFIER: FUSCO LLF3 DATE: 18SEP97

PG AND E

*** ACTION REQUEST ***

PAGE: 03

A/R NUMBER : A0431200A/R AGE: 00201A/R STATUS : HISTRYA/R TYPE : AT EQPRSTATUS DATE : 18NOV97REQST GROUP: PGMADATE REQUIRED: 15NOV97

SUBGROUP : _____

PRINT DATE : 28OCT10REQST ID : RMN1CONTACT: NANNINGA, RAT: 3348

===== PROGRAM REVIEWS =====

MRFF : <u>Y</u>	REG DOC CD: _____	PARENT AR: _____
POA : <u>NA</u>	OTHER INFO: <u>NRFR (5/20)</u>	LINK? : _____
SUPV GR: <u>DC</u>	MTE ID : _____	SCHED : _____
RT NBR : _____	OUTAGE : <u>D</u> RVWR: <u>PIMS 01MAY97</u>	OEA : _____
DCP NBR: <u>000000</u>	INTERNAL ORDER: _____	PROJ : _____

===== PROCESS ROUTING =====

	ID	NAME	PHONE	PAGER	DATE	TIME
INITIATED BY :	<u>RMN1</u>	<u>NANNINGA, R</u>	<u>3348</u>	<u>3348</u>	<u>01MAY97</u>	
SUPV REVIEW BY:	<u>MPD1</u>	<u>DAVIDO</u>	<u>4955</u>	<u>P8465</u>	<u>01MAY97</u>	
ROUTED BY :	<u>JNM1</u>	<u>MELLINGER</u>	<u>4691</u>	<u>4691</u>	<u>02MAY97</u>	
ASIGN RESP BY:					<u>N/A</u>	
FIELD CMPLT BY:					<u>N/A</u>	
COMPLETED BY :	<u>RSB2</u>	<u>BRUNS, R.S.</u>	<u>3396</u>	<u>3396</u>	<u>18NOV97</u>	

WHEN AR GOES TO HISTRY STATUS, NOTIFY: _____

PG AND E

*** ACTION REQUEST ***

PAGE: 04

A/R NUMBER : A0431200A/R AGE: 00201A/R STATUS : HISTRYA/R TYPE : AT EQPRSTATUS DATE : 18NOV97REQST GROUP: PGMADATE REQUIRED: 15NOV97

SUBGROUP : _____

PRINT DATE : 28OCT10REQST ID : RMN1CONTACT: NANNINGA, RAT: 3348AE NUMBER : 01 AE TYPE: _____ PROJ: _____ AE STATUS/DATE: COMPLT 16JUN97AE DESC : PERFORM MAINTENANCE RULE FAILURE CAUSE EVALUATION

----- GROUP SUBGROUP ID ----- INFO ----- DATE -----

REQUEST BY: PGMP _____ PIMS FUSCO DUE : 12JUN97ASSIGNED TO: PGMC _____ ANASTASIO, JOE ASSIGNED: 12MAY97RETURNED BY: _____ JEA3 ANASTASIO, JE RETURNED: 16JUN97COMPLETE BY: _____ LLF3

COMMIT CODE: ____ OUTAGE : _____ POA: ____ SCHED : ____ SA STATUS: ____

THIS EVENT HAS BEEN CLASSIFIED A FUNCTIONAL FAILURE UNDER LLF3 12MAY97
THE MAINTENANCE RULE. THE SYSTEM ENGINEER IS REQUESTED TO LLF3 12MAY97
PERFORM A FAILURE CAUSE EVALUATION IN ORDER TO DETERMINE LLF3 12MAY97
IF THE FAILURE WAS MAINTENANCE PREVENTABLE. REFER TO IDAP LLF3 12MAY97
MA1.ID17 FOR GUIDANCE. LLF3 12MAY97

ROOT CAUSE IS DEPOSITION OF CARBONATE LIKE DEPOSITS IN JEA3 23MAY97
THE COUNTERWEIGHT CHAMBER. JEA3 23MAY97

DEPOSITION ROOT CAUSE IS NOT PINNED DOWN AT THIS TIME, JEA3 16JUN97

BUT IT IS DUE TO ACTION OF THE SEAWATER LEAKING INTO JEA3 16JUN97

THE COUNTERWEIGHT CHAMBER. THE ANSWER IS TO EITHER JEA3 16JUN97

CLEAN THE CHAMBER MORE FREQUENTLY (PERFORM MORE FREQUENT JEA3 16JUN97

MAINTENANCE) OR TO MODIFY THE VALVE TO SEAL THE CHAMBER. JEA3 16JUN97

THIS EVENT CLASSIFIED AS MAINTENANCE PREVENTABLE SINCE LLF3 16JUN97

THE EXISTING MAINTENANCE PROGRAM DID NOT PREVENT THE LLF3 16JUN97

SALTWATER LEAKAGE. LLF3 16JUN97

PG AND E

*** ACTION REQUEST ***

PAGE: 05

A/R NUMBER : A0431200A/R AGE: 00201A/R STATUS : HISTRYA/R TYPE : AT EQPRSTATUS DATE : 18NOV97REQST GROUP: PGMADATE REQUIRED: 15NOV97SUBGROUP : PRINT DATE : 28OCT10REQST ID : RMN1CONTACT: NANNINGA, RAT: 3348

AE NUMBER : 02 AE TYPE: PROJ: AE STATUS/DATE: COMPLT 18SEP97
AE DESC : DOCUMENT RESULTS OF TES LAB ANALYSIS OF THE DEPOSITS

----- GROUP SUBGROUP ID ----- INFO ----- DATE ---
REQUEST BY: PGMA PIMS NANNINGA, R DUE : 15JUL97
ASSIGNED TO: PGMC JEA3 \$1DN ASSIGNED: 24JUN97
RETURNED BY: JEA3 ANASTASIO, JE RETURNED: 16SEP97
COMPLETE BY: RMN1

COMMIT CODE: OUTAGE : NOUT POA: SCHED : SA STATUS: X-RAY FLOURESENCE ANALYSIS INDICATES PRESENCE OF: JEA3 16SEP97FE,CA,NI,ZN,CL,MN,AL,MG,K,S JEA3 16SEP97QUALITATIVE X-RAY DIFFRACTION INDICATES THE PRESENCE OF: JEA3 16SEP97SJOGRENITE MG6FE2CO3(OH)16,14H2O MAJOR PHASE JEA3 16SEP97IRON OXALATE BETA HYDRATE 02FE04,12H2O MINOR PHASE JEA3 16SEP97CALCITE CACO3 MINOR PHASE JEA3 16SEP97ARAGONITE CACO3 MINOR PHASE JEA3 16SEP97ZINCITE ZNO MINOR PHASE JEA3 16SEP97. JEA3 16SEP97PER RAVI CHHATRE, TES CORROSION ENGINEERING, THESE JEA3 16SEP97DEPOSITS ARE COMMING OUT OF THE SEA WATER. JEA3 16SEP97THE DEPOSITION IS APPARENTLY ENHANCED DUE TO CORROSION JEA3 16SEP97SENSITIZING THE SURFACE OF THE AL/BRNZ WEIGHT CHAMBER. JEA3 16SEP97RAVI RECOMMENDS THAT WE CLEAN THE CHAMBER AND POLISH THE JEA3 16SEP97SURFACE TO REDUCE THE SENSITIZATION. JEA3 16SEP97AES HAVE BEEN WRITTEN TO THE INTAKE PLANNER TO ADD A RMN1 18SEP97STEP TO POLISH THE COUNTERWEIGHT HOUSING INSIDE SURFACES RMN1 18SEP97DURING THE NEXT SCHEDULED MAINTENANCE. THIS WILL BECOME RMN1 18SEP97A NORMAL PART OF MAINTAINING THESE VALVES. RMN1 18SEP97

=====END OF ACTION REQUEST=====

PG AND E

*** ACTION REQUEST ***

PAGE: 01

A/R NUMBER : A0438773A/R AGE: 00049A/R STATUS : HISTRYA/R TYPE : AT EVALSTATUS DATE : 20AUG97REQST GROUP: MM05DATE REQUIRED: 01MAR98

SUBGROUP : _____

PRINT DATE : 28OCT10REQST ID : RJL1CONTACT: R. LAVELLEAT: 3424A/R SUMMARY: SW-2-303: DEALLOYING OF BONNET GASKET SEATING AREA

WHILE PERFORMING P.M. R0166910 ON SW-2-303 IT WAS NOTED RJL1 02JUL97
THAT THE GASKET SEALING AREA OF THE BONNET SHOWED SLIGHT RJL1 02JUL97
SIGNS OF DEALLOYING. THIS A/R IS TO DOCUMENT THAT CON- RJL1 02JUL97
DITION. VALVE DOES NOT LEAK AT THE BONNET. RJL1 02JUL97
KXS7 03JUL97
THE ISSUE/EVENT DESCRIBED IN THIS AR HAS BEEN REVIEWED BY KXS7 03JUL97
THE DAILY AR REVIEW TEAM (DART) AND DETERMINED NOT TO BE KXS7 03JUL97
A QUALITY PROBLEM PER OM7.ID1. IF ADDITIONAL INFORMATION KXS7 03JUL97
IS DISCOVERED THAT WOULD AFFECT THE QUALITY PROBLEM KXS7 03JUL97
DETERMINATION, CONTACT YOUR DEPARTMENT DART REPRESENTATIVE. SET QP FIELD = N. KXS7 03JUL97
KXS7 03JUL97
ROUTED TO "PGMA" BASED ON CONVERSATION WITH RMN1... TEP1 08JUL97
THER HAS BEEN NO FUNCTIONAL FAILURE, THIS DOCUMENTS A JEA3 25JUL97
CONDITION. JEA3 25JUL97
RMN1 20AUG97
CONDITION NOTED IN CHECK VALVE TRENDING DATABASE, EXCEL RMN1 20AUG97
FILE C:\DATA\EXCEL\U2IST98.XLS, IN ORDER TO COMPARE WITH RMN1 20AUG97
FUTURE INSPECTION FINDINGS. WHEN BONNET LEAKAGE OCCURS RMN1 20AUG97
OR IS IMMINENT, REPLACEMENT WILL BE CONSIDERED VS. REPAIR RMN1 20AUG97
DUE TO ACCELERATING NATURE OF THE DE-ALLOYING PROCESS. RMN1 20AUG97
THIS AR CAN BE CLOSED. RMN1 20AUG97
***** START - OLD ACTIONS TAKEN / AR CLOSURE COMMENTS ***** PIMS 10JUL04
PROGRAM SO THAT DE-ALLOYING RATE CAN BE TRENDED UNTIL AN PIMS 10JUL04
INCREASE IS NOTED.2. CLOSE AR. PIMS 10JUL04
***** END - OLD ACTIONS TAKEN / AR CLOSURE COMMENTS ***** PIMS 10JUL04

MUC: C FEG: 2 17 2P2 COMP ID: 2 17 P V SW-2-303
COMP DESC : 2-2 ASW PUMP DISCH VACUUM RELIEF CHECK VALVE (L
AR TAG:
NO EQUIP TAG

HAVE TAG CONSIDERATIONS BEEN ADDRESSED? : _ VERIFIED BY : _____

===== REVIEW AND ASSIGNMENT =====

POTENTIALLY REPORTABLE?: N COMPONENT UNAVAILABLE: N SFM NOTIFIED : Y
PROBLEM CATEGORY : _____ LEVEL OF DEGRADATION : _____ PRIORITY : 4 000
REQUIRED DUE DATE : 01MAR98 SCHEDULE CATEGORY : _____ CTD: X WMI: M1
RESPONSIBLE GROUP : PGMA SUBGROUP: _____ ID: _____ INFO: RMN1\$1HY

===== QUALITY PROBLEM CHECKLIST =====

QA CLASS : Q _____ N/A
QUALITY PROB: N DART 03JUL97
QP RESP ORG : _____ _____ N/A QP DUE DATE: N/A
IND VERIFIER: _____ _____ DATE: _____

PG AND E

*** ACTION REQUEST ***

PAGE: 02

A/R NUMBER : A0438773A/R AGE: 00049A/R STATUS : HISTRYA/R TYPE : AT EVALSTATUS DATE : 20AUG97REQST GROUP: MM05DATE REQUIRED: 01MAR98

SUBGROUP : _____

PRINT DATE : 28OCT10REQST ID : RJL1CONTACT: R. LAVELLEAT: 3424

===== PROGRAM REVIEWS =====

MRFF : <u>N</u>	REG DOC CD: _____	PARENT AR: _____
POA : <u>NA</u>	OTHER INFO: _____	LINK? : _____
SUPV GR: <u>DC</u>	MTE ID : _____	SCHED : _____
RT NBR : _____	OUTAGE : _____ RVWR: <u>N/A</u>	OEA : _____
DCP NBR: <u>000000</u>	INTERNAL ORDER: _____	PROJ : _____

===== PROCESS ROUTING =====

	ID	NAME	PHONE	PAGER	DATE	TIME
INITIATED BY :	<u>RJL1</u>	<u>R. LAVELLE</u>	<u>3582</u>	<u>3582</u>	<u>3582</u>	<u>02JUL97</u>
SUPV REVIEW BY:	<u>RJL1</u>	<u>R. LAVELLE</u>	<u>3582</u>	<u>3582</u>	<u>3582</u>	<u>02JUL97</u>
ROUTED BY :	<u>TEP1</u>	<u>T.E. PIERCE</u>	<u>4590</u>	<u>4590</u>	<u>4590</u>	<u>08JUL97</u>
ASIGN RESP BY:	_____	_____	_____	_____	_____	<u>N/A</u>
FIELD CMPLT BY:	_____	_____	_____	_____	_____	<u>N/A</u>
COMPLETED BY :	<u>SAK1</u>	<u>ALLEN, S</u>	<u>3069</u>	<u>3069</u>	<u>3069</u>	<u>20AUG97</u>

WHEN AR GOES TO HISTRY STATUS, NOTIFY: _____

=====END OF ACTION REQUEST=====

A/R NUMBER : A0442225
 A/R TYPE : AT EQPR
 REQST GROUP: AOUT
 SUBGROUP : ADM/
 REQST ID : TEP1

A/R AGE: 00433CONTACT: ANASTASIO, JOE

A/R STATUS : HISTRY
 STATUS DATE : 29OCT98
 DATE REQUIRED: 31MAR99
 PRINT DATE : 28OCT10
 AT: 4909

A/R SUMMARY: SW-2-34: VACUUM BREAKER CHECK VALVE STUCK OPEN DURING STROK

DUIRNG RECIENT U2 MID-CYCLE ASW VACUUM BREAKER CHECK TEP1 22AUG97
VALVE PM INSPECTIONS (STROKE), MM FOUND SW-2-34 "...STUCK TEP1 22AUG97
CLOSED...", REFER TO W/O R0166871 CLOSING COMMENTS. TEP1 22AUG97
. TEP1 22AUG97
THE PROBLEM WAS CORRECTED BY MM VIA THAT W/O. HOWEVER, TEP1 22AUG97
NO A/R WAS WRITTEN AT THE TIME (NOTICED DURING PACKAGE TEP1 22AUG97
CLOSURE). TEP1 22AUG97
. TEP1 22AUG97
THE PM'S, RT (5)52084 THRU (5)52087, DO NOT SPECIFICALLY TEP1 22AUG97
STATE THAT AN A/R SHOULD BE WRITTEN IF THE VALVES ARE TEP1 22AUG97
FOUND TO BE DEGRADED. I HAVE DISCUSSED THIS ISSUE WITH TEP1 22AUG97
THE PM ENGINEER (DJD3) AND RECOMMENDED THAT WE CLARIFY TEP1 22AUG97
THE RT'S. TEP1 22AUG97
. DJD3 22AUG97
THE CURRENT PM TASK CAN BE REVISED TO INCLUDE SPECIFIC DJD3 22AUG97
DETAILS FOR VALVE INSPECTIONS THAT MAY AFFECT VALVE DJD3 22AUG97
OPERABILITY. THIS SUBJECT NEEDS TO BE ADDRESSED BY THE DJD3 22AUG97
RESPONSIBLE SYSTEM AND COMPONENT ENGINEERS PRIOR TO DJD3 22AUG97
REVISING THE PM TASKS. CURRENT PM PROCEDURE MA1.DC51 DJD3 22AUG97
REQUIRES THAT AN AR BE WRITTEN WHENEVER AN UNEXPECTED DJD3 22AUG97
CONDITON OUTSIDE OF THE PM TASK IS FOUND. THIS SHOULD DJD3 22AUG97
CLEARLY BE THE CASE FOR A VALVE THAT IS FOUND STUCK OPEN DJD3 22AUG97
OR CLOSED. THE SUBJECT OF PROPER PM LINE ITEMS FOR DJD3 22AUG97
ADDRESSING ENGINEERING AND MANAGEMENT EXPECTATIONS SHOULD DJD3 22AUG97
BE ADDRESSED AS A SEPARATE ITEM FROM THIS VALVE PROBLEM. DJD3 22AUG97
. DJD3 22AUG97
. KXS7 26AUG97
THE ISSUE/EVENT DESCRIBED IN THIS AR HAS BEEN REVIEWED BY KXS7 26AUG97
THE DAILY AR REVIEW TEAM (DART) AND DETERMINED TO BE A KXS7 26AUG97
QUALITY PROBLEM PER OM7.ID1. IF ADDITIONAL INFORMATION KXS7 26AUG97
IS DISCOVERED THAT WOULD AFFECT THE QUALITY PROBLEM KXS7 26AUG97
DETERMINATION, CONTACT YOUR DEPARTMENT DART REPRESEN- KXS7 26AUG97
TATIVE. SET QP FIELD = A. KXS7 26AUG97
. RMN1 26AUG97
THE UNIT-1 ASW VACUUM BREAKERS HAVE HAD THEIR SEATS RMN1 26AUG97
REPLACED WITH TEFLON COATED SEATS. THIS MODIFICATION, RMN1 26AUG97
PERFORMED IN ALL 4 UNIT-1 VALVES, APPEARS EFFECTIVE IN RMN1 26AUG97
ELIMINATING THE SEAT STICKING PROBLEM. I RECOMMEND WE RMN1 26AUG97
MODIFY THE SPARE VALVES IN WAREHOUSE STOCK AND SWAP THEM RMN1 26AUG97
OUT IN UNIT-2 DURING 2R8. THIS WORK DOES NOT ADD TO 2R8 RMN1 26AUG97
WORK SCOPE SINCE THE SEAT REPLACEMENTS WOULD BE PERFORMED RMN1 26AUG97
PRIOR TO 2R8. RATHER THAN REBUILDING THE VALVES DURING RMN1 26AUG97
2R8, WHICH IS TYPICAL, WE WOULD SWAP THEM OUT THEN, WHICH RMN1 26AUG97
WOULD ACTUALLY REDUCE THE AMOUNT OF WORK DONE IN 2R8. RMN1 26AUG97
REF. C0146783 FOR MODIFYING THE SPARE VALVES FOR UNIT-1. RMN1 26AUG97
THIS MODIFICATION WAS PERFORMED I.A.W. RPE P-7066. RMN1 26AUG97
MRFF SET TO Y, THIS VALVE SHOULD NOT BE STUCK EITHER OPEN JEA3 27AUG97

A/R NUMBER : A0442225
A/R TYPE : AT EQPR
REQST GROUP: AOUT
SUBGROUP : ADM/
REQST ID : TEP1

A/R AGE: 00433CONTACT: ANASTASIO, JOE

A/R STATUS : HISTRY
STATUS DATE : 29OCT98
DATE REQUIRED: 31MAR99
PRINT DATE : 28OCT10
AT: 4909

OR CLOSED. JEA3 27AUG97
TEP1 05SEP97
*UP-DATE: A/R A0437708 TRACKS INSTALLATION OF TEFLON TEP1 05SEP97
SEATS IN THE U2 CHECK VALVES. WORK ORDERS ARE TEP1 05SEP97
CURRENTLY SCHEDULED FOR 2R8. TEP1 05SEP97
CONCUR WITH SE EVALUATION IN AE01 THIS EVENT WAS MAINT. LLF3 18SEP97
PREVENTABLE. LLF3 18SEP97
RMN1 22SEP97
CORRECTION TO REQUESTOR'S ENTRY ON 8/22/97 (LINE 3): THIS RMN1 22SEP97
VALVE WAS NOT FOUND STUCK CLOSED. THE VALVE STUCK OPEN RMN1 22SEP97
WHEN HAND-STROKED (SEE R0166871 CLOSURE REMARKS). AS- RMN1 22SEP97
FOUND, THE VALVE WAS CLOSED AND THE DISC WAS NOT STICKING RMN1 22SEP97
TO IT'S SEAT. WHILE CERTAINLY NOT DESIRABLE, THIS RMN1 22SEP97
CONDITION IS MUCH LESS SIGNIFICANT FOR THIS VALVE THAN RMN1 22SEP97
STICKING CLOSED. IN THE EVENT THAT A PUMP TRIP OR OTHER RMN1 22SEP97
OPERATIONAL TRANSIENT MIGHT CYCLE THE VALVE AND CAUSE IT RMN1 22SEP97
TO STICK OPEN, THE VALVE WOULD STILL BE CAPABLE OF RMN1 22SEP97
PERFORMING IT'S PRIMARY DESIGN FUNCTION. RMN1 22SEP97
RMN1 25NOV97
THIS ISSUE OF THIS AR - THE VALVE STICKING IN THE OPEN RMN1 25NOV97
POSITION AS IT WAS HAND-STROKED - IS BEING ADDRESSED BY RMN1 25NOV97
INCLUDING A POLISHING STEP IN THE PM WORK ORDERS. THE RMN1 25NOV97
PROBLEM IS THAT THERE ARE TIGHT CLEARANCES BETWEEN THE RMN1 25NOV97
COUNTERWEIGHT AND THE COUNTERWEIGHT HOUSING. THE RMN1 25NOV97
CORROSION THAT WE'VE SEEN IS A RESULT OF THE DE-ALLOYING RMN1 25NOV97
PROCESS AND WE HAVE SEEN A HEAVY CRUST FORM AT THE AIR-TO RMN1 25NOV97
WATER INTERFACE IN THE COUNTERWEIGHT HOUSING. TES HAS RMN1 25NOV97
DETERMINED THAT POLISHING THE COUNTERWEIGHT HOUSING RMN1 25NOV97
INTERIOR SURFACES WILL SLOW THE DEALLOYING PROCESS, WHICH RMN1 25NOV97
ACCELERATES WITH AGE DUE TO GRADUALLY INCREASING SURFACE RMN1 25NOV97
AREA OF THE METAL. THE VALVES THAT WILL BE INSTALLED IN RMN1 25NOV97
UNIT-2 DURING 2R8 WILL HAVE THEIR HOUSINGS POLISHED WHEN RMN1 25NOV97
THE WAREHOUSE SPARE VALVES ARE REFURBISHED WITH THE NEW RMN1 25NOV97
TEFLON SEAT RINGS PRE-2R8. THE VALVES REMOVED FROM UNIT- RMN1 25NOV97
2 WILL BE REBUILT FOR INSTALLATION IN UNIT-1 DURING 1R9. RMN1 25NOV97
MEANWHILE, WE ARE WATCHING CLOSELY FOR THIS CONDITION RMN1 25NOV97
WHICH DOES NOT SEEM TO OCCUR TO THE SAME DEGREE WITH ALL RMN1 25NOV97
THE VALVES AND 6 MONTHS HAS BEEN DEMONSTRATED TO BE RMN1 25NOV97
FREQUENT ENOUGH TO PREVENT THIS CONDITION FROM AFFECTING RMN1 25NOV97
VALVE OPERABILITY IS MOST CASES. RMN1 25NOV97
THIS AR CAN BE CLOSED. RMN1 25NOV97
THIS IS AN A-TYPE AR THAT WILL REMAIN OPEN UNTIL THE UNIT RMN1 01DEC97
2 VALVES ARE REPLACED AT 2R8 WITH UPGRADED VALVES. DUE RMN1 01DEC97
DATE CHANGED TO REFLECT THIS. RMN1 01DEC97
PWB2 02FEB98
A0437708 ADDED AS CHILD AR AS IT IMPLEMENTS THE PWB2 02FEB98
CORRECTIVE ACTIONS FOR THIS QUALITY PROBLEM. PWB2 02FEB98
PWB2 02FEB98
VALVES SW-2-34 & 170 HAVE BEEN REPLACED WITH TEFLON RMN1 04MAR98

A/R NUMBER : A0442225
A/R TYPE : AT EQPR
REQST GROUP: AOUT
SUBGROUP : ADM/
REQST ID : TEP1

A/R AGE: 00433CONTACT: ANASTASIO, JOE

A/R STATUS : HISTRY
STATUS DATE : 29OCT98
DATE REQUIRED: 31MAR99
PRINT DATE : 28OCT10
AT: 4909

SEATED AND POLISHED VALVES. SW-2-301 & 303 HAVE BEEN RMN1 04MAR98
REMOVED AND REPLACEMENT VALVES WITH TEFLON SEATS AND RMN1 04MAR98
POLISHED COUNTERWEIGHTS/COUNTERWEIGHT HOUSINGS WILL BE RMN1 04MAR98
REINSTALLED AFTER CURRENT CONCRETE REPAIRS ARE COMPLETE RMN1 04MAR98
AND THEIR SUPPORT REINSTALLED, CURRENTLY SCHEDULED FOR RMN1 04MAR98
3/9/98. RMN1 04MAR98
VALVES SW-2-301 & 303 HAVE BEEN REINSTALLED. THESE RMN1 11MAR98
REBUILT VALVES HAVE TEFLON COATED SEAT RINGS AND POLISHED RMN1 11MAR98
COUNTERWEIGHTS AND COUNTERWEIGHT HOUSINGS. RMN1 11MAR98
RMN1 11MAR98
SUMMARY OF ISSUES W.R.T. ASW VACUUM BREAKERS: RMN1 11MAR98
RMN1 11MAR98
ISSUE # 1 (SEAT STICKING): ALL 8 VALVES IN BOTH UNITS (4 RMN1 11MAR98
EACH UNIT) HAVE BEEN REBUILT WITH TEFLON SEAT RINGS. RMN1 11MAR98
THIS CORRECTIVE ACTION IS EXPECTED TO AND APPEARS TO HAVE RMN1 11MAR98
CORRECTED THE PROBLEM WITH DISCS STICKING TO THEIR SEATS RMN1 11MAR98
DUE TO LONG PERIODS OF INACTIVITY. RMN1 11MAR98
RMN1 11MAR98
ISSUE # 2 (STICKING OPEN, SLUGGISH STROKING): THIS ISSUE RMN1 11MAR98
IS LESS SIGNIFICANT FOR THESE VALVES SINCE THEIR SAFETY RMN1 11MAR98
FUNCTION IS TO OPEN TO RELIEVE VACUUM. THE CORRECTIVE RMN1 11MAR98
ACTION FOR THIS PROBLEM IS POLISHING THE COUNTERWEIGHTS RMN1 11MAR98
AND COUNTERWEIGHT HOUSING INTERIOR SURFACES. THIS WILL RMN1 11MAR98
GREATLY REDUCE THE CORROSION RATE AND THE SPEED AT WHICH RMN1 11MAR98
THE AIR-TO-WATER INTERFACE CORROSION LAYER FORMS IN THE RMN1 11MAR98
COUNTERWEIGHT HOUSINGS. THE UNIT-2 VALVES HAVE BEEN RMN1 11MAR98
POLISHED. UNIT-1'S HAVE NOT. CURRENT PLANS ARE TO RMN1 11MAR98
REPLACE THE UNIT-1 VACUUM BREAKERS WITH THE ONES REMOVED RMN1 11MAR98
FROM UNIT-2 DURING 2R8 AFTER THEY HAVE BEEN REBUILT WITH RMN1 11MAR98
TEFLON SEATS AND POLISHED HOUSINGS AND COUNTERWEIGHTS. RMN1 11MAR98
RMN1 11MAR98
IN SUMMARY: UNIT-2 - BOTH ISSUES SHOULD BE RESOLVED. RMN1 11MAR98
UNIT-1 - SEAT STICKING, THE MORE SIGNIFICANT RMN1 11MAR98
ISSUE, HAS BEEN RESOLVED. POLISHED VALVES RMN1 11MAR98
TO BE INSTALLED 2R9 TO RESOLVE COUNTERWEIGHT RMN1 11MAR98
HOUSING INTERNAL CLEARANCE PROBLEM. RMN1 11MAR98
RMN1 11MAR98
OOPS! MAKE THAT 1R9, 3 LINES ABOVE. RMN1 25MAR98
THIS AR WILL TRACK REPLACEMENT OF THE UNIT-1 VALVES WITH RMN1 25MAR98
POLISHED COUNTERWEIGHT/CW HOUSING VALVES AT 1R9. AR RMN1 25MAR98
REQUIRED DATE REVISED TO 3/31/99 FROM 3/31/98. RMN1 25MAR98
REQUEST ORGN CHANGED FROM MM05 TO AOUT - SEE PMOD 226112. PIMS 27JUN98
RMN1 27OCT98
QE Q0012080 WRITTEN 10/23/98 TO ADDRESS PERFORMING A RMN1 27OCT98
FORMAL CAUSE EVALUATION FOR THIS PROBLEM. THE WORK RMN1 27OCT98
ORDERS FOR MODIFYING THE VALVES REMOVED FROM UNIT-2 RMN1 27OCT98
DURING 2R8 FOR INSTALLATION IN UNIT-1 DURING 1R9 ARE RMN1 27OCT98
WRITTEN OFF AR A0437708. THEREFORE, THIS AR CAN BE RMN1 27OCT98
CLOSED. RMN1 27OCT98

PG AND E

*** ACTION REQUEST ***

PAGE: 04

A/R NUMBER : A0442225
A/R TYPE : AT EQPR
REQST GROUP: AOUT
SUBGROUP : ADM/
REQST ID : TEP1

A/R AGE: 00433CONTACT: ANASTASIO, JOE

A/R STATUS : HISTRY
STATUS DATE : 29OCT98
DATE REQUIRED: 31MAR99
PRINT DATE : 28OCT10
AT: 4909

* SAK1 29OCT98
QP CLOSED AND WILL BE TRACKED ON QE REFERENCED ABOVE. SAK1 29OCT98
***** START - OLD ACTIONS TAKEN / AR CLOSURE COMMENTS ***** PIMS 10JUL04
RT WO'S WILL MODIFY UNIT 1 VALVES, THIS AR TRACKS QP PIMS 10JUL04
ONLY QE Q0012080 WRITTEN 10/23/98, WILL PIMS 10JUL04
NOW TRACK THE QP. PIMS 10JUL04
***** END - OLD ACTIONS TAKEN / AR CLOSURE COMMENTS ***** PIMS 10JUL04

MUC: C FEG: 2 17 1P1 COMP ID: 2 17 P V SW-2-34
COMP DESC : 2-1 ASW PUMP DISCH VACUUM RELIEF CHECK VALVE (R
AR TAG:
NO EQUIP TAG

HAVE TAG CONSIDERATIONS BEEN ADDRESSED? : Y VERIFIED BY : _____

===== REVIEW AND ASSIGNMENT =====

POTENTIALLY REPORTABLE?: N COMPONENT UNAVAILABLE: N SFM NOTIFIED : Y
PROBLEM CATEGORY : _____ LEVEL OF DEGRADATION : _____ PRIORITY : 3 000
REQUIRED DUE DATE : 31MAR99 SCHEDULE CATEGORY : _____ CTD: X WMI: M1
RESPONSIBLE GROUP : PGMA SUBGROUP: _____ ID: _____ INFO: ASM1\$1DN 1R9 A-TYPE*

===== QUALITY PROBLEM CHECKLIST =====

QA CLASS : Q N/A
QUALITY PROB: C SAK1 29OCT98
QP RESP ORG : PGMA SAK1 16APR98 QP DUE DATE: 31MAR99
IND VERIFIER: ALLEN, S SAK1 DATE: 29OCT98

===== PROGRAM REVIEWS =====

MRFF : Y REG DOC CD: _____ PARENT AR: _____
POA : _____ OTHER INFO: RFR-COMPLT3/11-RMN1 LINK? : _____
SUPV GR: DC MTE ID : _____ SCHED : _____
RT NBR : _____ OUTAGE : _____ RVWR: N/A OEA : _____
DCP NBR: 000000 INTERNAL ORDER: _____ PROJ : _____

===== PROCESS ROUTING =====

	ID	NAME	PHONE	PAGER	DATE	TIME
INITIATED BY :	<u>TEP1</u>	<u>T.E. PIERCE</u>	<u>4590</u>	<u>4590</u>	<u>22AUG97</u>	
SUPV REVIEW BY:	<u>TEP1</u>	<u>T.E. PIERCE</u>	<u>4590</u>	<u>4590</u>	<u>22AUG97</u>	
ROUTED BY :	<u>JLJ1</u>	<u>JOHNSON, J.</u>	<u>4894</u>	<u>4894</u>	<u>26AUG97</u>	
ASIGN RESP BY:					<u>N/A</u>	
FIELD CMPLT BY:					<u>N/A</u>	
COMPLETED BY :	<u>SAK1</u>	<u>ALLEN SHEILA D</u>	<u>3069</u>	<u>3069</u>	<u>29OCT98</u>	<u>08:38</u>

WHEN AR GOES TO HISTRY STATUS, NOTIFY: _____

PG AND E

*** ACTION REQUEST ***

PAGE: 05

A/R NUMBER : A0442225A/R AGE: 00433A/R STATUS : HISTRYA/R TYPE : AT EQPRSTATUS DATE : 29OCT98REQST GROUP: AOUTDATE REQUIRED: 31MAR99SUBGROUP : ADM/PRINT DATE : 28OCT10REQST ID : TEP1CONTACT: ANASTASIO, JOEAT: 4909

AE NUMBER : 01 AE TYPE: PROJ: AE STATUS/DATE: COMPLT 18SEP97
AE DESC : PERFORM MAINTENANCE PREVENTABLE CAUSE DETERMINATION

----- GROUP SUBGROUP ID ----- INFO ----- DATE --
REQUEST BY: PGMP PIMS FUSCO DUE : 02OCT97
ASSIGNED TO: PGMC ANASTASIO, JOE ASSIGNED: 02SEP97
RETURNED BY: JEA3 ANASTASIO, JE RETURNED: 16SEP97
COMPLETE BY: LLF3

COMMIT CODE: OUTAGE : POA: SCHED : SA STATUS:
THIS EVENT HAS BEEN CLASSIFIED A MR FUNCTIONAL FAILURE. LLF3 02SEP97
THE SE IS REQUESTED TO PERFORM A MAINTENANCE PREVENTABLE LLF3 02SEP97
CAUSE DETERMINATION IAW IDAP MA1.ID17. LLF3 02SEP97
THE MOST LIKELY CAUSE IS CORROSION OR OTHER CAUSED SEAT JEA3 16SEP97
STICKING. THE MODIFICATION PROPOSED IN THIS AR SHOULD JEA3 16SEP97
ELIMINAT THIS PROBLEM. JEA3 16SEP97
CONCUR WITH THE SE THAT THE FAILURE WAS MAINTENANCE LLF3 18SEP97
PREVENTABLE. LLF3 18SEP97

=====END OF ACTION REQUEST=====

PG AND E

*** ACTION REQUEST ***

PAGE: 01

A/R NUMBER : A0460974A/R AGE: 00027A/R STATUS : HISTRYA/R TYPE : AT EQPRSTATUS DATE : 01JUN98REQST GROUP: PGMADATE REQUIRED: 29MAY98

SUBGROUP :

PRINT DATE : 28OCT10REQST ID : RMN1CONTACT: NANNINGA, RAT: 3348A/R SUMMARY: SW-1-34 - MINOR RESISTANCE TO OPENING SEEN DURING PM

DURING THE PERFORMANCE OF THE 6 MONTH PM ON THIS VACUUM RMN1 05MAY98
BREAKER UNDER W/O R0177381, NOTICEABLE RESISTANCE WAS RMN1 05MAY98
ENCOUNTERED DURING HAND STROKING AT APPROXIMATELY THE 1/4 RMN1 05MAY98
OPEN POSITION. THIS IS AN EXPECTED CONDITION AND IS RMN1 05MAY98
CAUSED BY A THIN CORROSION LAYER FORMING ON THE AIR-TO- RMN1 05MAY98
WATER INTERFACE IN THE COUNTERWEIGHT HOUSING. IT TOOK RMN1 05MAY98
ABOUT 2 POUNDS OF PRESSURE TO BREAK THRU THIS LAYER AND RMN1 05MAY98
FROM THAT POINT ON, THE VALVE STROKED FREELY. THIS RMN1 05MAY98
CONDITION DOES NOT JEOPARDIZE OPERABILITY OF THIS VALVE RMN1 05MAY98
OR THE SYSTEM. 6 MONTHS IS NOT SUFFICIENT TIME FOR THIS RMN1 05MAY98
CORROSION LAYER TO BUILD UP TO A THICKNESS THAT MIGHT RMN1 05MAY98
AFFECT THIS VALVE'S ABILITY TO PERFORM IT'S DESIGN RMN1 05MAY98
FUNCTION. THEREFORE, IT IS ACCEPTABLE TO RETURN THIS RMN1 05MAY98
VALVE TO SERVICE FOR ANOTHER 6 MONTHS. DURING 1R9, WE RMN1 05MAY98
PLAN ON INSTALLING THE VALVES REMOVED FROM UNIT-2 DURING RMN1 05MAY98
2R8 WITH POLISHED COUNTERWEIGHTS AND HOUSINGS TO REDUCE RMN1 05MAY98
THE RATE OF DEALLOYING. THIS IS A MANAGEABLE PROBLEM RMN1 05MAY98
THAT WE CAN CONTROL WITH CONTINUED ATTENTION TO THE RMN1 05MAY98
POLISHED CONDITION OF THE COUNTERWEIGHTS/HOUSINGS. RMN1 05MAY98
RMN1 05MAY98
ANY WORK ASSOCIATED WITH THE SUBJECT VACUUM BREAKERS CAN RAW2 05MAY98
BE ACCOMPLISHED AT POWER. AS A RESULT, ANY WORK REQUIRED RAW2 05MAY98
TO BE PERFORMED MUST BE PLANNED AND COORDINATED IN THE RAW2 05MAY98
ON LINE MAINTENANCE SCHEDULE. WITH REFERENCE TO THE RAW2 05MAY98
PREVIOUS PARAGRAPH, THE RECOMMENDED SCOPE OF WORK IS RAW2 05MAY98
NOT CONSIDERED 1R9 SCOPE. RAW2 05MAY98
RAW2 05MAY98
RAW2 - NTS ACTION REQUEST REVIEW TEAM AND 30/30 OUTAGE RAW2 05MAY98
TEAM REPRESENTATIVE. RAW2 05MAY98
RAW2 05MAY98
MRFF=N, VALVES EXPERIENCE GREATER THAN 45 LBS OPENING JEA3 08MAY98
FORCE WHEN ACTUATING TO RELIEVE VACUUM, SO VALVE WOULD JEA3 08MAY98
HAVE FUNCTIONED JEA3 08MAY98
RMN1 01JUN98
FAILURE HAS BEEN ADDED TO FAILURE TRENDING DATA BASE. RMN1 01JUN98
THIS AR CAN BE CLOSED. RMN1 01JUN98
***** START - OLD ACTIONS TAKEN / AR CLOSURE COMMENTS ***** PIMS 10JUL04
FURTHER ACTION REQUIRED. ENTER EVENT INTO CHECK VALVE PIMS 10JUL04
FAILURE DATA BASE. PIMS 10JUL04
***** END - OLD ACTIONS TAKEN / AR CLOSURE COMMENTS ***** PIMS 10JUL04

MUC: C FEG: 1 17 1P1 COMP ID: 1 17 P V SW-1-34COMP DESC : 1-1 ASW PUMP DISCH VACUUM RELIEF CHECK VALVE (R

AR TAG:

NO EQUIP TAGHAVE TAG CONSIDERATIONS BEEN ADDRESSED? : VERIFIED BY :

PG AND E

*** ACTION REQUEST ***

PAGE: 02

A/R NUMBER : A0460974A/R AGE: 00027A/R STATUS : HISTRYA/R TYPE : AT EQPRSTATUS DATE : 01JUN98REQST GROUP: PGMADATE REQUIRED: 29MAY98SUBGROUP : PRINT DATE : 28OCT10REQST ID : RMN1CONTACT: NANNINGA, RAT: 3348

===== REVIEW AND ASSIGNMENT =====

POTENTIALLY REPORTABLE?: N COMPONENT UNAVAILABLE: N SFM NOTIFIED : N
PROBLEM CATEGORY : LEVEL OF DEGRADATION : PRIORITY : 2 000
REQUIRED DUE DATE : 29MAY98 SCHEDULE CATEGORY : CTD: P WMI: M1
RESPONSIBLE GROUP : PGMA SUBGROUP: ID: INFO: RMN1\$2HN

===== QUALITY PROBLEM CHECKLIST =====

QA CLASS : Q N/A
QUALITY PROB: N DART 06MAY98
QP RESP ORG : N/A QP DUE DATE: N/A
IND VERIFIER: DATE:

===== PROGRAM REVIEWS =====

MRFF : N REG DOC CD: PARENT AR:
POA : OTHER INFO: LINK? :
SUPV GR: DC MTE ID : SCHED :
RT NBR : OUTAGE : RVWR: N/A OEA :
DCP NBR: 000000 INTERNAL ORDER: PROJ :

===== PROCESS ROUTING =====

	ID	NAME	PHONE	PAGER	DATE	TIME
INITIATED BY	: <u>RMN1</u>	<u>NANNINGA, R</u>	<u>3348</u>	<u>3348</u>	<u>05MAY98</u>	<u> </u>
SUPV REVIEW BY:	<u>MPD1</u>	<u>DAVIDO</u>	<u>4955</u>	<u>P8465</u>	<u>06MAY98</u>	<u> </u>
ROUTED BY	: <u>MPD1</u>	<u>DAVIDO</u>	<u>4955</u>	<u>P8465</u>	<u>13MAY98</u>	<u> </u>
ASIGN RESP BY:	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>N/A</u>	<u> </u>
FIELD CMPLT BY:	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>N/A</u>	<u> </u>
COMPLETED BY	: <u>RMN1</u>	<u>NANNINGA, R</u>	<u>3348</u>	<u>3348</u>	<u>01JUN98</u>	<u> </u>

WHEN AR GOES TO HISTRY STATUS, NOTIFY:

=====END OF ACTION REQUEST=====

U-0

Notification: **50297724**Type: **DN** Work Type: **EVAL OEA**Description: **NEI 09-14, GL for Mgmt of Buried Piping**

Order:

Funct. Loc: **DC-0-00****U0 SYS 00 ADMINISTRATIVE-NO SYS ENG**Reported By: **TCJ1** Thomas C. JoyceRpt By Work Ctr: **NPI**Contact Info: **TCJ1** Thomas C. Joyce 805/545-4139Created On: **09 Feb 10 07:04**

Planner Group:

Main Wrk Ctr: **NPI**

Supervisor - Performance Improvement

PROBLEM DESCRIPTION

02/09/2010 06:05:09 Thomas C. Joyce (TCJ1) Phone 805/545-4139

This SAPN requests evaluation of Nuclear Energy Institute NEI 09-14, "Guideline for the Management of Buried Piping Integrity", dated January, 2010. Evaluation should be IAW the rigor and timeliness requirements of OM4.ID3, "Assessment of Industry Operating Experience".

IF through the course of evaluation a problem is identified, a new SAPN shall be initiated IAW OM7.ID1, "Problem Prevention and Resolution".

* * * *

In Part..

The Industry Guideline for the Management of Buried Piping Integrity describes the policy and practices that the industry commits to follow in managing buried piping. These guidelines support the Industry Initiative on Buried Piping Integrity adopted by the NEI Nuclear Strategic Issues Advisory Committee (NSIAC) on November 18, 2009. Utility implementation of the Initiative will be verified as directed by the NSIAC. This guideline:

Documents the scope of the formal Industry Initiative on Buried Piping Integrity (the #Initiative#).

Sets the goals that drive the Initiative.

Defines the roles and responsibilities established to ensure

Event Date **09 Feb 10**Notif Required By **10 Apr 10**Station Sig.: **5 Other**

U-0

Notification: **50297724**

Type: **DN** Work Type: **EVAL OEA**

Description: **NEI 09-14, GL for Mgmt of Buried Piping**

Order:

implementation of the Initiative.

Defines the content and responsibilities for creating reports to NSIAC on Initiative implementation.

The approach to addressing buried piping issues embodied in this Initiative is in addition to the expectations in place under the Ground Water Protection Initiative, which was approved by NSIAC in 2007 and which remains fully in effect.

* * * *

FULL document and transmittals attached to this SAPN.

* * * *

02/10/2010 12:06:03 Lee F. Goyette (LFG1) Phone 805/545-6523

DCPP has been actively developing a buried piping program in response to 1) license extension requirements, and 2) the draft NEI 09-14.

Activities have been underway for the past year, and include joint efforts with STARS. See 50286561 of 12/1/2009. Suggest 50297724 be closed and actions continue to be tracked on 50286561.

02/10/2010 13:19:31 Jana M. Orlando (JMSO) Phone 805/545-3126

The issue/event documented on this notification was reviewed by the Notification Review Team (NRT) and determined to be the indicated significance level per OM7.ID1. If additional information is discovered that would affect the significance level determination, contact a member of the NRT.

.

03/31/2010 17:36:26 Nozar Jahangir (NXJ1)

Note; DCPP applicability evaluation is documented in task -2.

HBPP should be consulted for applicability to that site.

04/01/2010 06:17:13 Thomas C. Joyce (TCJ1) Phone 805/545-4139

=====

Manager concurrence obtained. Tasks COMPLETE. HBPP evaluation consideration eMail sent (attached to this SAPN). Notification being CLOSED.

U-0

Notification: **50297724**Type: **DN** Work Type: **EVAL OEA**Description: **NEI 09-14, GL for Mgmt of Buried Piping**

Order:

=====

STATUS DETAILS

System Status: **NOCO ATCO**User Status: **25** **ASGN** Assigned to Target Workcenter

Task # 1 Screen NEI 09-14 for DCPD Applicability

Status: **TSCO**

Task Completed

Code Group: **DG-OEA**

Operating Experience Assessment

Task Code: **OESC**

Evaluate for Screen and Closure

Responsible: **User Responsible TCJ1** Thomas C. Joyce **805/545-4139**

Work Ctr:

Created On: **09 Feb 10**By: **TCJ1** Thomas C. JoycePlanned Start: **09 Feb 10**Planned Finish: **09 Feb 10**Completed On: **09 Feb 10 06:21**By: **TCJ1** Thomas C. Joyce **805/545-4139**

02/09/2010 06:14:08 Thomas C. Joyce (TCJ1) Phone 805/545-4139
Evaluate the industry operating experience (OPEX) in this Notification in accordance with procedure OM4.ID3, Assessment of Industry Operating Experience, and determine which course of action below is appropriate.

1) Screen and close this Notification based on the criteria in OM4.ID3. Include a brief justification herein. Refer also to item 4 below.

2) Request a subject matter expert (SME) to assist in the review for applicability by creating an OEIA task for an initial applicability determination.

3) Request a formal evaluation (OE is applicable and cannot be screened) by creating an OEFE task and an OEMC task for manager concurrence.

4) If the OPEX may be applicable to Humboldt Bay Power Plant (HBPP), inform HBPP accordingly.

IMPORTANT NOTES:

1. Consider whether the condition or issue identified in a 10CFRPart21, NSAL, Vendor Technical Advisory, Supplier Defect Report, etc. could potentially impact the operability of SSCs. If so, then the Shift

U-0

Notification: **50297724**Type: **DN** Work Type: **EVAL OEA**Description: **NEI 09-14, GL for Mgmt of Buried Piping**

Order:

Foreman, Work Control Shift Foreman, or Shift Manager should be notified per OM7.ID1.

2. IF Shift Foreman or Shift Manager notification is required per 1. above, AND the issue, event, or condition affects TS or ECG structures, systems, or components (SSCs), THEN create a DO-EFFCT-SFMR Task for Operations to acknowledge receipt of the verbal notification and that an OPS evaluation is proceeding, as applicable, in accordance with OM7.ID12.

This task is being taken to COMPLETE in lieu of the formal evaluation requested by management. Refer to OEFE and OEMC tasks this SAPN.
=====

Task # 2 Evaluate NEI 09-14 for DCPD Applic

Status: **TSCO**

Task Completed

Code Group: **DG-OEA**

Operating Experience Assessment

Task Code: **OEFE**

OE Formal Evaluation Request

Responsible: **User Responsible**Work Ctr: **ETR**

Reliability

Created On: **09 Feb 10**By: **TCJ1** Thomas C. JoycePlanned Start: **09 Feb 10**Planned Finish: **23 Feb 10**Completed On: **10 Feb 10 12:17**By: **LFG1** Lee F. Goyette**805/545-6523**

02/09/2010 06:24:29 Thomas C. Joyce (TCJ1) Phone 805/545-4139

This Task requests your evaluation of the operating experience (OPEX) in this Notification. If a problem is identified during the course of your evaluation, a separate Notification should be initiated to report that problem in accordance with procedure OM7.ID1.

NOTE:

a) The basis for requesting this evaluation is in the OESC Task for this Notification.

b) OEA has initially set the Planned Finish date to 2/23/2010 for performing an initial review, assuring the Work Center assignment is appropriate, and determining if additional Tasks are needed to support your evaluation.

c) After completing item b) above, the Planned Finish date may be

U-0

Notification: **50297724**

Type: **DN** Work Type: **EVAL OEA**

Description: **NEI 09-14, GL for Mgmt of Buried Piping**

Order:

extended as required to complete the evaluation, but NOT beyond the OEMC Task planned finish date (3/31/2010).

Please evaluate the OPEX in this Notification and determine if DCPD systems, structures, components, or processes are vulnerable to or otherwise impacted by the event or issue in this OPEX. Recommend corrective actions as warranted and obtain a manager concurrence in the OEMC Task for this Notification. If no action is required, please provide a brief basis for that conclusion.

The evaluation and corrective action recommendations should consider the following, if applicable based on the nature and scope of the OPEX:

- 1) Should a plant system, structure, component (SSC) be evaluated to determine if there are any impacts to the intended design function, operability, or reliability?
- 2) Should warehouse stock be inspected / restricted to assure that potentially defective or adversely impacted components are not installed?
- 3) Should there be a restricted equipment list (REL) entry or revision to prevent future purchases or installation of deficient parts or materials (Ref AD9.ID9)?
- 3) Do DCPD processes, procedures, or programs appropriately address the conditions, issues, and causes described and discussed in the OPEX?
- 4) If current process barriers (above) are at risk for being removed or inappropriately modified in the future, should a procedure be revised with the necessary annotation to assure the barrier is retained?
- 5) Does this OPEX warrant training? Does this OPEX need to be evaluated for inclusion in pre-job briefs, or refresher training program content (Ref. TQ2.ID5)?

This task should not be completed until the manager has concurred with the evaluation and recommendation and closed the OEMC Task for this Notification.

+++++

IF your evaluation determines that action is required, THEN:

- 1) Obtain manager concurrence (OEMC Task)
- 2) Initiate a new notification to report that action is required to address the issue in this OPEX. Clearly indicate the Notification is for action resulting from the evaluation of OPEX.

U-0

Notification: **50297724**Type: **DN** Work Type: **EVAL OEA**Description: **NEI 09-14, GL for Mgmt of Buried Piping**

Order:

3) Provide a cross reference in the new notification to this notification number.

4) Include a cross reference herein to the new notification number.

5) Close this OEFE task (after manager concurrence in the OEMC Task).

Please advise OEA if you initiate a new notification.

=====

02/10/2010 12:16:02 Lee F. Goyette (LFG1) Phone 805/545-6523
DCPP has been actively developing a buried piping program in response to 1) license extension requirements, and 2) the draft NEI 09-14. Activities have been underway for the past year, and include joint efforts with STARS. See 50286561 of 12/1/2009. Suggest 50297724 be closed and actions continue to be tracked on 50286561.

Task # 3 Mgr concur: Eval of NEI 09-14Status: **TSCO**

Task Completed

Code Group: **DG-OEA**

Operating Experience Assessment

Task Code: **OEMC**

Manager Concur with Formal Eval

Responsible: **User Responsible****PXN2**

Patrick T. Nugent

805/545-4701Work Ctr: **ET**

Manager - Eng Tech Supt- Nugent P - PXN2

Created On: **09 Feb 10**By: **TCJ1** Thomas C. JoycePlanned Start: **09 Feb 10**Planned Finish: **31 Mar 10**Completed On: **31 Mar 10 17:36**By: **NXJ1** Nozar Jahangir

02/09/2010 06:27:03 Thomas C. Joyce (TCJ1) Phone 805/545-4139
In accordance with OM4.ID3, please provide your concurrence for:

1. The evaluation for the OPEX in this Notification (see OEFE Task).
2. The recommended action(s) in the OEFE Task, as applicable.

=====

03/31/2010 17:34:13 Nozar Jahangir (NXJ1)
I concur with the response on task-2 . Applicable to DCPP and program development is unedrway.
HBPP should be consulted for applicability to that facility.