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10 CFR 2.390(a)(6)

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Unit 2

System Status: NOPR ORAS OSTs
User Status: CRID MRC STA ACRO

SONGS

Notification: NN

(b)(7)(C)



Description: 2B007 Battery Past Operability

Created on: (b)(7)(C)

Reported By:

Responsible: (b)(7)(C)

Priority: 4 Medium

Required Start: 07/22/2010 12:00

End: 11/18/2010 12:00

Order No: 800524124

Code:

Task Exists? [Y]

Func.Loc.: S2.DCPS.2B007 125V STATION BATTERY 2B007

Equipment:

Assembly:

Quality Class: II

Location: CB

Room:

Elevation:

Column:

Planner Group: Maint Electrical

WorkCenter: M_CMC Nuc Const & Engrg Support-M/C

Plant: 1000 SONGS - Services

Reliability Classification: CRITICAL-A

ARC Review Status: C Completed

Feedback Req'd? [X]

M Rule: Sig Level: 4 Low Level Issue

Breakdown [] Malfunction Start: 06/07/2010 07:05 Breakdown Duration: H
End:

Description:

06/02/2010 12:01:52

(b)(7)(C)

/ 1. Problem description

/ Old 2B007 battery bank, rated at 1260 Amp-Hour (AH), is scheduled to be replaced by 2/3B00X battery, starting from 06/02/2010. 2B007 battery has 4 red cells in service for over 6 months now. They are identified as cell numbers 15, 31, 40, and 43. Copper contamination causes the negative plates to appear as red and a flash light is needed to inspect them properly. Normally, the bottom of the terminal post that is inside the battery jar and in contact with the electrolyte is attacked by the acid when the lead covering around the terminal post has become porous.

Fine copper particles leave the terminal post and attach themselves to the negative plates. It is a very slow process, but the cross-section of the terminal post is reduced gradually. During a battery discharge test, all the current flows through these terminal posts and a reduced cross-section could cause over heating and in extreme cases, melting of the affected terminal post.

/ Last 2B007 battery service test was performed on 01/02/2008 (ref. MO #06031768). Per Tech Spec SR 3.8.4.3, the frequency of a battery service test for 1260 AH is every 24 months. In June 2010, 2B007

Information in this record was deleted
in accordance with the Freedom of Information
Act, exemptions
FOIA

E/21

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Description Continued:

battery will be replaced by 2/3B00X battery jars that are rated at 1800 AH. A Modified Performance Test was performed on 2/3B00X battery in May 2010 (ref. NSVO #800183271) and the battery capacity was 103.5 %.

/

/ Question here is: How do we prove that old 2B007 battery was Operable up to now with 4 red cells in service?

/

/ I spoke with (b)(7)(C) of EnerSys on 06/01/2010 morning about 4 battery jars with red cells inside. I told him that on 06/02/2010 we will be taking 2B007 battery bank out of service for replacement with B00X battery jars.

/

/ Question 1. Should we perform a Service Test on 2B007 battery bank now before the jars are removed to prove past Operability?

/ (b)(7)(C) answer: It all depends who wants to know? I told him that I wanted to know. His response was: If the service test was unsatisfactory, SONGS Management has to justify past Operability.

/

/ Question 2. If the present work schedule can not fit 2B007 battery bank Service Test now, how about testing the worst red cell #15?

/ (b)(7)(C) response: It's up to SONGS Management.

/

/ Question #3. When should we ship all 4 red cell jars to Hays, Kansas?

/ (b)(7)(C) answer: Sooner the better. He does not know how the copper migrates in relation to time.

/

/ Question #4. Will EnerSys perform a service test on the red cells?

/ (b)(7)(C) response: Most likely yes. He is most concerned about justifying 79% Capacity at the end of the (performance) test, if that was the end result.

/

/

/ 2. Impact or consequence

/ Weekly inspection of 4 red cells has not shown any observable degradation.

/ Irrespective of who does the service test, if the final test result is negative, then SONGS must address the past Operability concern.

SONGS

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Description: 2B007 Battery Past Operability

Description Continued:

- /
- /
- / 3. Describe what happened
- / See the Problem description above.
- /
- / 4. Immediate actions taken
- / None.
- /
- / 5. Cause (if known)
- / Cause of red cells is unknown and its effect on the battery service test is unknown.
- /
- / 6. Recommended Actions
- / Maintenance Engineering (ME) should take the lead on evaluation of this concern, with a review by Licensing / Compliance. They should decide if a battery service test should be performed or not at SONGS and when. Please note that 2B007 battery is presently isolated and ready to be removed. ME should contact EnerSys and make arrangement for shipping 4 red cells to Kays, Kansas factory.
- / EnerSys should perform their Root Cause and battery cell discharge testing. EnerSys should submit their official findings to SONGS.
- /
- /

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Notification: NN

(b)(7)(C)

Func.Loc.: S2.DCPS.2B007

125V STATION BATTERY 2B007

Location: CB

Room:

Elevation:

Column:

Sort No.: 0001 Code Group:N-TS-IOD Immediate Operability Determination
Short Text: see long text
Task Code: NO45 IOD-Equipment Restored to Operable
WorkCenter:
Responsible:

Sort No.: 0002 Code Group:N-EOC Extent of Condition Assessment
Short Text:
Task Code: E010 Provide Initial Estimate
WorkCenter: M CMC Nuc Const & Engrg Support-M/C
Responsible: (b)(7)(C)

Sort No.: 0003 Code Group:N-RPT Reportability Assessment
Short Text:
Task Code: RP20 RPT Engineering review
WorkCenter: EM EE Electrical Engrg
Responsible: (b)(7)(C)

Sort No.: 0004 Code Group:N-SPT General Support Record
Short Text: Evaluate request&provide recommendation
Task Code: ST01 SPT CREATED
WorkCenter: M CMC Nuc Const & Engrg Support-M/C
Responsible: (b)(7)(C)

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Notification: NN

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Func.Loc.: S2.DCPS.23007

125V STATION BATTERY 23007

Part: _____

Damage: _____

Cause: _____

Activity: _____

Part: _____

Damage: _____

Cause: _____

Activity: _____

Part: _____

Damage: _____

Cause: _____

Activity: _____

Part: _____

Damage: _____

Cause: _____

Activity: _____

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Task Details

SONGS

Notification: NN

(b)(7)(C)

Func.Loc.: S2.DCPS.2B007

125V STATION BATTERY 2B007

Location: CB

Room:

Elevation:

Column:

Task Details:

Sort No.: 0001

Code Group: N-TS-IOD

Immediate Operability Determination

Short Text: see long text

Task Code: NO45

IOD-Equipment Restored to Operable

WorkCenter:

Responsible:

Status: TSCO

Planned Start:

(b)(7)(C)

Planned End:

(b)(7)(C)

Complete:

(b)(7)(C)

Task Long Text:

NOTES:

- 1) Parts 1 through 4 will be completed by the STA.
- 2) Part 5 may be completed by Operations (STA) or Engineering (Responsible Engineer) when the SSC has been restored to a fully qualified status. IOD (Immediate Operability Determination)

This is an Immediate Operability Determination (IOD).

1. Deficiency Identified and the Affected Functional Location:
2. Identify the Specified Safety Function(s); include mission time (if applicable):
3. Conclusion:

Determine OPERABLE/INOPERABLE

_____ Operable

_____ Inoperable

Basis (provide discussion):

4. Extent of Condition

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SONGS

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NOTE: Address the question: "Does the degraded or nonconforming condition currently exist on the other train/unit?"

a) Has an EOC Task been created to address the extent of condition (YES or NO)?

b) If no EOC Task has been created, describe "other train/other unit" findings (if performed) or indicate N/A (if not necessary).

5. IOD Closure Information

The battery has been removed from 2D1 and will never be used again. An RPT assignment has been generated.

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Task Details

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Notification: NN

(b)(7)(C)

Func.Loc.: S2.DCPS.2B007

125V STATION BATTERY 2B007

Location: CB

Room:

Elevation:

Column:

Task Details:

Sort No.: 0002

Code Group: N-EOC

Extent of Condition Assessment

Short Text:

Task Code: E010 Provide Initial Estimate

WorkCenter: M CMC Nuc Const & Engrg Support-M/C

Responsible: (b)(7)(C)

Status: TSRL

Planned Start:

Planned End:

Complete:

Task Long Text:

EOC (Extent of Condition Assessment)

Perform an Extent of Condition (EOC) evaluation for an identified deficiency to determine if the deficiency currently exists elsewhere. Do not use this method to determine cause; use a DCE, ACE or RCE as appropriate to determine the cause.

If the EOC is being used to not delay completion of an Immediate Operability Determination or a Prompt Operability Determination, consider only "other train / other unit" applications.

For all other EOC uses, determine and evaluate scope as necessary.

Refer to SO123-XV-52 and SO123-XV-50 CAP-3.

1. Affected Equipment (See deficiency description or, if the deficiency description is incomplete or incorrect, describe)

This EOC is limited to battery bank 2B007 which is no longer installed in the plant.

2. Deficiency Identification (See description or, if the description is incomplete or incorrect, describe)

Old 2B007 battery bank, rated at 1260 Amp-Hour (AH), is scheduled to be replaced by 2/3B00X battery, starting from 06/02/2010. 2B007 battery has 4 red cells in service for over 6 months now. They are identified

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Description: 2B007 Battery Fast Operability

negative plates to appear as red and a flash light is needed to inspect them properly. Normally, the bottom of the terminal post that is inside the battery jar and in contact with the electrolyte is attacked by the acid when the lead covering around the terminal post has become porous.

Fine copper particles leave the terminal post and attach themselves to the negative plates. It is a very slow process, but the cross-section of the terminal post is reduced gradually. During a battery discharge test, all the current flows through these terminal posts and a reduced cross-section could cause over heating and in extreme cases, melting of the affected terminal post.

3. Discussion of findings, including the basis for the conclusion:

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(b)(7)(C)

Func.Loc.: S2.DCPS.2B007

125V STATION BATTERY 2B007

Location: CB

Room:

Elevation:

Column:

Task Details:

Sort No.: 0003

Code Group: N-RPT

Reportability Assessment

Short Text:

Task Code: RP20

RPT Engineering review

WorkCenter: EM EE

Electrical Engrg

Responsible:

(b)(7)(C)

Status: TSRL

Planned Start:

Planned End: 07/02/2010

Complete:

Task Long Text:

REPORTABILITY ASSESSMENT TEMPLATE

NOTE: Timely assessment for reportability consideration is important.

RPT assignment due date as a function of priority is as follows based on system defaults: Pri 2/3A (7 days), Pri 3B (30 days), Pri 3C (60 days)

Reference Procedure S0123-XV-3.3, NRC Reporting Requirements and Assessments.

Questions 1 through 4 and Engineering Peer Review, to be performed by Engineering.

1. When did the SSC fail or first become degraded (break, code not met, out of SR range, etc.)? An SSC can be considered "failed when found" only if there is no compelling evidence of earlier failure.

2. What was the apparent cause (use engineering judgment to determine, if necessary - but, also describe the basis for your judgment) of the failure or degraded condition? If appropriate, generate a cause evaluation assignment.

3. Would the SSC have been able to fulfill all its intended safety function(s) as defined in the UFSAR (reference specific sections) since the failure (Operable)? Consider all plant operating Modes and the status of other equipment. If yes, why?

SONGS

Notification: NN (b)(7)(C)
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4. Did the failure or failure mode affect or potentially affect another SSC or the other unit?

Engineering Peer Review (comments):

Engineering Peer Review performed by:

5. (BY Encode qualified personnel - see Encode 270QC7: Assessing Events for Reportability) Reportability assessment summary (include references as appropriate):

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Notification: NN

(b)(7)(C)

Func.Loc.: S2.DCPS.2B007

125V STATION BATTERY 2B007

Location: CB

Room:

Elevation:

Column:

Task Details:

Sort No.: 0004

Code Group: N-SPT General Support Record

Short Text: Evaluate request&provide recommendation

Task Code: ST01 SPT CREATED

WorkCenter: M CMC Nuc Const & Engrg Support-M/C

Responsible: (b)(7)(C)

Status: TSRL

Planned Start: 06/03/2010 12:02

Planned End: 11/18/2010 12:00

Complete:

Task Long Text:

SPT (General Support Record)

Describe the General support request:

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