

From: Gaude, Edward C. [/O=CCC/OU=CCC-CLY-BACK
END/CN=RECIPIENTS/CN=GAUDEEC] 8/25/2005 7:47 AM
To: Jahn, Ray
Cc: Brown, Steve (browns@camerondiv.com); Estes, Ike (estes@camerondiv.com); Curtis, Charles
(curtisc@camerondiv.com)
Bcc:
Subject: RE: FW: AMF batteries
Attachments:

Steve,

The answer to Transocean concerning the rechargeable battery packs for "old" system is we do not plan to develop it. If Transocean feels strongly enough about needing a re-chargeable system then we would try to quote one. Please see if they would fit this on their rigs it might be worthwhile for us to work this out but it would take some time due to our work load, probably several months. If they want a quote please generate an ESR.

Ed

From: Jahn, Ray
Sent: Thursday, August 25, 2005 6:33 AM
To: Gaude, Edward C.
Subject: RE: FW: AMF batteries

Ed -

I think it can be done. It would take a bit of work though. Some of the things that are different or to think about are:

- 1) This pack would require dual voltages
- 2) How to get into the SEM
- 3) Location of the package on the POD
- 4) Where to mount the charger
- 5) PBOF cable
- 6) etc.

There is probably more to think about but I still think it can be done.

Ray Jahn
Ph.# 713 939 2768
Fax.# 713 939 2169

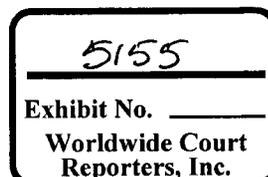
From: Gaude, Edward C.
Sent: Wednesday, August 24, 2005 4:28 PM
To: Jahn, Ray
Cc: Brown, Steve
Subject: RE: FW: AMF batteries

Ray,

Maybe we need to put this in the "aftermarket group" to look at developing. Based on the work already done for the new MUX it may not be too big a leap to work out a "kit". What do you think?

Ed

Confidential



CAM_CIV_0371709

From: Jahn, Ray
Sent: Wednesday, August 24, 2005 2:59 PM
To: Gaude, Edward C.
Cc: Brown, Steve
Subject: RE: FW: AMF batteries

Ed -

The way it was explained to me by Brian Williams and Steve Donohue, both of Transocean, lead me to believe that it was strictly on performance or actuations. Some rigs added another 2x onto the recommended one year change out and were changing out batteries every six months. Now they are saying the batteries don't even last that but only 3 months. I haven't been able to get any information from them on how they are testing the AMF/Deadman circuits.

The testing done by Saft was basically the same test ran by Jean Bertholon and Ray Arbor. We gave them a copy of our test and that is what they used to formulate their test. The results of their batteries were consistent with our test and the Friwo batteries. The new configuration, by the test results, should give them a few months and few more actuations than the Friwo batteries. But I didn't do any calculations to determine exactly how much more so I stuck with the original recommendations.

Steve Donohue had mentioned interest in rechargeable batteries almost a year ago. They liked the idea of moving the batteries out of the SEM because they wanted to get rid of the STM's. Now that they are almost there with alleviating the STM's they are moving onto the rechargeable batteries. They are now saying that they don't like to open up the SEMs so often, even yearly. I agree they are trying to force us to come up with rechargeable batteries for the older systems.

This all came to a head when the Express was testing their AMF/Deadman system and a West person was on board witnessing or maybe even conducting the testing.

Ray Jahn
Ph.# 713 939 2768
Fax.# 713 939 2169

From: Gaude, Edward C.
Sent: Wednesday, August 24, 2005 2:24 PM
To: Jahn, Ray C (jahn@camerondiv.com)
Cc: Brown, Steve (browns@camerondiv.com)
Subject: FW: FW: AMF batteries

Ray,
I know I've seen several e-mails on this subject and you have pointed out to 'USF' that maybe they were imposing a "fudge factor" on the battery life in addition to the factor we have already imposed when we have a stated life of 33 actuations or one year (I think that's what I remember). I now get the impression from this e-mail that they aren't basing their decisions strictly on time but actual performance; is that correct?

If the testing that SAFT did was correct and we gave them a sound design criteria we should be on an equal par with the Friwo batteries, right? Does Transocean have a problem or are they trying to force us into a re-chargeable battery design by presenting this "issue"? If we were sitting around playing solitaire then I would jump on designing a retrofit to sell everybody, but we aren't in that situation at this time. Your comments.

Ed

From: Williams, Brian K [mailto:BWilliams@houston.deepwater.com]
Sent: Wednesday, August 24, 2005 8:10 AM
To: Brown, Steve

Confidential

CAM_CIV_0371710

Cc: Estes, Ike; Adams, Johnny; Hensley, John; Gaud, Edward C.
Subject: FW: FW: AMF batteries

Steve,

Does Cameron have any plans to develop a retrofit rechargeable AMF battery module? Ray had mentioned that this was something that Cameron was developing for the new systems. Now that all of the batteries are located in the SEM's and some are being replaced every 6 months, I feel that we are exposing ourselves to an increased risk of flooding the SEM.

Regards,

Brian

-----Original Message-----

From: Williams, Brian K
Sent: Wednesday, August 03, 2005 12:14 PM
To: 'Jahn, Ray'
Cc: Coronado, Richard; 'Coronado@camerondiv.com'
Subject: RE: FW: AMF batteries

Ray,

Because the AMF batteries are now to be located in the SEM and they appear to last only a few months, I foresee many problems stemming from frequently opening the SEMs to replace these batteries. You mentioned that Cameron was working on a rechargeable solution for your next generation SEMs. Can you quote what it would take to retrofit this solution to our SEMs? I would like a separate battery canister connected to the SEM via an unused pie connection (27VDC, 9VDC). From my understanding, the reason we have a battery for each AMF card now is to increase the battery life, but this would not be an issue with rechargeable batteries.

Regards,

Brian

-----Original Message-----

From: Williams, Brian K
Sent: Thursday, July 28, 2005 10:59 AM
To: 'Jahn, Ray'
Subject: RE: FW: AMF batteries

Ray,

Because the AMF battery life does not appear to meet Cameron's specifications, we would like to see the data from your testing. Both the Express

Confidential

CAM_CIV_0371711

and the Energy have had similar experiences with the degraded battery life, yet they operate much differently. The Express **only** makes the AMF active in the active SEM, but they have a fairly lengthy AMF sequence, 12 solenoids energized in AMF1. The Energy makes the AMF active in all SEMs, but has a shorter sequence, only 7 solenoids energized in AMF1.

Regards,

Brian

-----Original Message-----

From: Jahn, Ray [mailto:jahn@camerondiv.com]
Sent: Thursday, July 28, 2005 8:20 AM
To: Williams, Brian K
Subject: RE: FW: AMF batteries

Brian -

I meant the next chance they get could they take some current measurements.

Cameron did extensive testing on the old Friwo batteries and these tests were given to Saft for them to run on the new style batteries. These tests were run at a low temperature and high temperature. Recommendations were taken from these tests. The data taken is proprietary and will need approval from the VP of Drilling Systems to hand out.

Ray Jahn

Ph.# 713 939 2768

Fax.# 713 939 2169

From: Williams, Brian K [mailto:BWilliams@houston.deepwater.com]
Sent: Thursday, July 28, 2005 8:14 AM
To: Jahn, Ray
Cc: Rig_EXS, Electronic
Subject: RE: FW: AMF batteries

Ray,

As I stated earlier, there will be **no** further testing with the SEMs, at least not **until** they are prepared to change the batteries **again**. They are preparing the BOP for deployment next week. Do you have any data to backup the 1 year or 33 actuations replacement recommendation? I assume there is a significant margin of safety in such a recommendation, considering the varying number of functions in rig-specific AMF sequences. Does this recommendation depend on environmental conditions?

Confidential

CAM_CIV_0371712

Regards,

Brian

-----Original Message-----

From: Jahn, Ray [<mailto:jahn@camerondiv.com>]

Sent: Thursday, July 28, 2005 8:00 AM

To: Williams, Brian K

Subject: RE: FW: AMF batteries

Brian -

What I need to know is the current drain from the SEM on the batteries during the two modes.

Do you know if all four SEMs are armed at one time?

Tom is back and just can't wait to talk to you.

Ray Jahn

Ph.# 713 939 2768

Fax.# 713 939 2169

From: Williams, Brian K [<mailto:BWilliams@houston.deepwater.com>]

Sent: Thursday, July 28, 2005 7:58 AM

To: Jahn, Ray

Subject: RE: FW: AMF batteries

Ray,

They are not going to perform any further testing on the new batteries, as they have no spares. Would you like them to perform any testing on the old ones?

Confidential

CAM_CIV_0371713

Regards,

Brian

-----Original Message-----

From: EXS - ET Supervisor [<mailto:electronic@exs.rig.deepwater.com>]
Sent: Thursday, July 28, 2005 7:51 AM
To: Williams, Brian K
Subject: Re: FW: AMF batteries

Brian

Sorry for the delay in reply. I'm not happy to **run** live tests on the BOP with the new batteries **because** I don't have any more in stock and Cameron are having difficulty supplying us with replacements. With the new sets installed I've run a **successful** AMF from each pod and until I gain confidence in these battery packs I want to **keep unnecessary** operation to a minimum. We'll **be running** the BOP next week. I can rig up a test bench with the batteries I've just removed but **what** do they want to see? I think the quick tests **performed** already prove that we've at least **one** weak cell. Please advise.

I agree the units have been sitting on deck **connected** for the last 3 months with SEM temperatures at approx 44 deg C.

Regards
Ivan

At 06:36 28/07/2005 -0500, you wrote:

FYI

-----Original Message-----

From: Jahn, Ray [<mailto:jahn@camerondiv.com>]
Sent: Thursday, July 28, 2005 6:33 AM
To: Williams, Brian K
Subject: RE: AMF batteries

Brian -

The Express has stated that even the old batteries **never** lived up to the rating. Can they run **some** current tests - 1) **monitor** mode and 2) **during** AMF sequence?

Ray Jahn
Ph.# 713 939 2768
Fax.# 713 939 2169

-----Original Message-----

From: Williams, Brian K
Sent: Wednesday, July 27, 2005 8:23 AM
To: Rig_EXS, Electronic
Subject: RE: AMF batteries

Ivan,

Another concern for battery life is heat. If the **battery** packs were installed over 3 months ago **and** the SEMs have **been** buttoned up and **sitting** on the deck, the heat would definitely take its toll.

Confidential

CAM_CIV_0371714

Regards,

Brian

-----Original Message-----

From: Williams, Brian K
Sent: Wednesday, July 27, 2005 8:02 AM
To: Rig_EXS, Electronic
Subject: RE: AMF batteries

Ivan,

I'll forward the question to Cameron. I do know that battery life will vary depending on the number of functions operated in an AMF sequence, environmental conditions, etc. I believe that the Energy has been replacing their batteries every 6 months.

Regards,

Brian

From: Williams, Brian K [mailto:BWilliams@houston.deepwater.com]
Sent: Wednesday, July 27, 2005 8:07 AM
To: Jahn, Ray
Cc: 'Coronado@camerondiv.com'
Subject: FW: AMF batteries

Ray,

Can you address the concerns outlined below? The Express software only makes the AMF active on the active SEM. I've attached the AMF sequences from Ally.

Regards,
Brian

-----Original Message-----

From: EXS - ET Supervisor [mailto:electronic@exs.rig.deepwater.com]
Sent: Wednesday, July 27, 2005 5:49 AM
To: BWilliams@houston.deepwater.com
Subject: AMF batteries

Brian,

Another little query I'd like to run by you. It's a couple of days old now as we've been busy with other items but cutting straight to the point as I know WEST will follow this up.

During WEST tests onboard, the AMF sequence when tested with Yellow A as active, failed to complete. On Blue A it was okay. We changed out the batteries (2x individual 9V and the three for the 27V) and tested again on Yellow A satisfactorily.

We use the new type battery packs (Cameron P/N 2232368-01). They were installed 9 April 05. The system was obviously tested when the BOP was rebuilt prior to the voyage to Angola. Unfortunately I do not know how many AMF

Confidential

CAM_CIV_0371715

actuators were made during this time **although** I would be surprised if it was more than 10 as I have no reported problems in the handovers. We made 4 actuators on Yellow before **changing** out the batteries.

We've given the batteries a quick discharge test with 2.6 ohm resistance giving

off load	on load
8.63	7.5
9.37	8.44
9.12	8.14
9.12	8.12
9.12	8.15

Cameron have kept their recommendations for replacement exactly as the older type (1 year in use or more than 33 actuators) which incidentally we never believed nor trusted. With the older batteries, we replaced them approximately every 3 months. Can we see the test report Cameron have for the new batteries please?

Have any other rigs reported on the new type batteries?

Regards
Ivan
Ivan Hayes ..
Electronic Supervisor
Sedco Express
Transocean

electronic@exs.rig.deepwater.com
Tel: +44 1224 3423 70/71/72/73
EFax: + (44) (0)870 458 0649

~~~~~  
This e-mail is confidential, may contain **proprietary** information of the Cooper Cameron Corporation **and** its operating Divisions and may be confidential or privileged.

This e-mail should be read, copied, **disseminated** and/or used **only** by the addressee. If you have received **this** message in error please delete it, together with any attachments, **from** your system.

~~~~~  
Ivan Hayes ..
Electronic Supervisor
Sedco Express
Transocean

electronic@exs.rig.deepwater.com
Tel: +44 1224 3423 70/71/72/73
EFax: + (44) (0)870 458 0649

~~~~~  
This e-mail is confidential, may contain **proprietary** information of the Cooper Cameron Corporation **and** its operating Divisions and may be confidential or privileged.

This e-mail should be read, copied, **disseminated** and/or used **only** by the addressee. If you have received **this** message in error please delete it, together with any attachments, **from** your system.

~~~~~  
This e-mail is confidential, may contain **proprietary** information

Confidential

CAM_CIV_0371716

of the Cooper Cameron Corporation and its operating Divisions
and may be confidential or privileged.

This e-mail should be read, copied, disseminated and/or used only
by the addressee. If you have received this message in error please
delete it, together with any attachments, from your system.

 Confidential

CAM_CIV_0371717

