

New Folder Name Weld Wire Cleaning

LIGO-T940014-00-B



1501 North Division Street
Plainfield, Illinois 60544-8929

FACSIMILE MESSAGE

Fax No. is: 815 439 6010
Verify No. is: 815 439 6000

Page 1 of 3

May 4, 1994

To: Larry Jones
LIGO Project Caltech Pasadena, California

Fax No. (818)304-9834

From: M. L. Tellalian Phone (815)439-6517
Plainfield Engineering - PAE

RE: Weld Wire Cleaning and Quality Control
LIGO Design & Qualification Test - Caltech Contract C146

Larry,

Attached is a copy of a letter I received from Rick Prior which provides some information on weld wire cleaning from Techalloy. The letter contains a brief description of the cleaning process. We have not pressed Techalloy for the solvents and detergents used so I don't know how difficult it will be to obtain this information.

The contact at Electric Boat is Warren Mayott. He is out of the office until Thursday so hopefully, Rick can contact him tomorrow.

This is just some preliminary information and we will put together a formal response by the end of this week. As we discussed earlier, the cost coupon preparation will be similar to the costs of the previous weld wire investigations. In addition to coupon preparation, there will likely be some additional man-hours required to develop the cleaning and handling procedures and to use these procedures in the Qualification Test. Based on the little we know at this point, the overall cost to develop wire cleaning and handling procedures, prepare coupons for testing, and use of the procedures in the QT will likely be between \$15,000 and \$20,000.

Give me or Rick a call if you have any questions. Otherwise, we should have something together by the end of the week.

Regards,

M. L. Tellalian
Plainfield Engineering

cc: K. Flessas - CBICL Houston
B. Grimsley / R. Prior - MWG
MLT - PAE / LIGO File 2.2.2
LIGO File 9.1.1

cc: BGG/CNS/930212-4.8
KEN FLESSAS - CBICLH
000

May 4, 1994

TO: MARTY TELLALIAN
CBITSC

Re: Cleaned Filler Wire for LIGO
Communication with Techalloy
Contract 930212 - 710

The following is a procedure Techalloy would adopt to manufacture extra clean wire of ER308L (0.035" diameter):

1. Start size - 0.218"
2. First breakdown - 0.082"
3. Further draw it down to 0.068"
4. Anneal at 2000°F
5. Draw down to 0.035" on Vaughn IV with in-line cleaning. Vaughn IV is one of their final wire drawing machines. The in-line cleaning process consists of mechanical, thermal and chemical cleaning. The surface of the wire is thoroughly cleaned of surface lubricants.
6. Clean once again by passing it through in-line cleaning baths of sidewinders. Sidewinders are another set of machines where the wire is drawn. The in-line cleaning baths in this set up uses a different cleaner. The cleaning solution is at a temperature of 165°F.
7. Spool onto 2 lb spools with applying any oil. During normal production, a minute amount of low temperature evaporating oil is applied for smooth travel through liners. As this oil contains hydrocarbons, it's application is not appropriate.

All cast and helix controlling rollers must also be entirely free from oil. The cleaning agents are industrial detergents. The effectiveness of the cleaning process is derived not only from the detergents but from the combination of the thermal, mechanical and chemical actions. This cleaning process is considered to be one of Techalloy's strengths, it is Techalloy's company policy to keep the cleaning agents circulation restricted.

The cost of the wire depends upon the quantity of the product as the set up times and handling are the same whether it is small or large quantity. Verbally, I was given an amount of \$0.75 to \$1.00 per pound extra. This is only a 25% increase in price resulting in approximately \$25,000 extra for the option.

cc:

@ cbi
5/16/94

Techalloy has done this cleaning process in the past and can adapt for it. They can also easily meet out schedule. Techalloy would like to send us a 5 lb sample for our use in the welding of the outgas coupons and at the same time, they will send a loop of the same wire to an outside laboratory for estimating hydrogen content.

I will also be contacting Electric Boat, contact given by Tom Eagar, this morning and forward information when I receive it. If you have any questions, please call.

Rick Prior
Houston Corporate Welding

INTEROFFICE CORRESPONDENCE