everson tesla

November 2, 2006

Mr. Jack Jagger
5709 Riverview Drive
Lisle, IL 60532

Subject: P906 180° Magnet Saddle Coil
Everson Tesla Quotation Number 5002

Dear Mr. Jagger:

In response to your Request for Budgetary Quotation for the P906 180° Magnet Saddle Coil, we are pleased to provide budgetary price and delivery below.

**Everson Part No. 52820 P906 180° Magnet Saddle Coil**

| | |
|---|---|
| Quantity: | 2 each |
| Unit Price: | $ 351,640.00 each (Includes Conductor) |
| Tooling Charge: | $ 160,000.00 (a one time charge) |
| Shipping: | $ 3,500/each |
| Scope of Work: | This is a budgetary quote for 2 saddle coils consisting of 7 pancakes per coil. Each pancake will have its own coolant circuit and temperature switch. Coil materials are aluminum conductor and B-stage tape. |
| Delivery: | Approximate delivery is 18-22 weeks ARO<br>FOB Argonne National Laboratory, IL |
| Payment Terms: | Net 30<br>NOTE: Tooling will be invoiced upon acceptance of order. |
| Price Validity: | 30 days |

We thank you for your inquiry and look forward to working with you on this project. Please feel free to call with any questions or concerns.

Very truly yours,
EVERSON TESLA, INC.

Doug Hartman
Program/Account Manager

615 Daniels Road • Nazareth, PA 18064 • (610) 746-1520 • FAX (610) 746-1530
www.eversontesla.com

SIGMAPHI
Aimants pour accélératours de particules
Magnets for particle accelerators

**PRICE PROPOSAL**
**N° A610/0598**

**ARGONNE NATIONAL LABORATORY**
**9700 South Cass Avenue**
**ARGONNE, IL 60439**
**USA**
**For the attention of Mr Paul E. REIMER**
**& Mr Jack M. JAGGER**

Vannes on the 25th of October 2006

Y/Ref. : Your request for E-906 Magnet coils
O/Ref. : DD/A501-0340 / A610-0598

Dear Sirs,

Further to your above referenced inquiry, we reviewed our previous offer and are pleased to submit our budgetary proposal for the following equipment:

- 2 E-906 MAGNET COILS, following your documents dated 1/2/2005, our technical form 23401 review A, our drawings 14717-CE-401, 14717-CE-5000 A, 14717-CE-0001-MA B and 14717-CE-6000-TR C.

  Technical remarks :
  - Material :
    - Aluminium conductor, supplied by ANL
    - One to two splices per coil
    - Electrical and hydraulical connections as per specification
    - We would take responsibility of the insulation, guaranteeing that the c coil passes the specified tests. Our standard system is 1 layer half overlapped of Cetaver fiberglas 0.20 mm thick for the conductor, 1 layer for the pancake insulation, and 2 layers of 0.25 mm half overlapped for the ground insulatyion, more depending of the specified electrical tests

  - Process :
    The main mines are very close to your analysis:
    - Conductor is pressure tested, unwound, straightened, cleaned on the winding line
    - It is wound on a mandrel with ajustable length
    - Keystoning effect is brought back within 1 mm
    - Each pancake is individually shaped on a specific tooling
    - Unless you have a specific constraint to have 2 sub coils, we would make each coil in one moulding. This simplifies a lot the mould design and moulding operation.
    - After ground insulation and suitable tests, the coil is vacuum impregnated with Araldite F resin in a single operation.

- Exits are shaped and electrical and hydraulic connections are welded
- Coils are clamped on a specific support for transportation.
- A specific control tool is made for each step (winding each pancake, shaping, before and after moulding).
- Electrical tests are made after each step.
- Expected tolerances are :
  - overall dimensions ± 30 mm.
  - Coil cross section $+^{10}_{-5}$ mm

- Toolings :
  - One adjustable mandrel
  - One winding line
  - One shaping tool
  - One mould
  - One support per coil
  - Control calipers
  - Handling tools

Our price for these 2 coils is :

**O/Ref. : 23401-ANL-0201** **Total Price** **€** **530.000,-** X 1,3 = 689

As we had already made a reasonable analysis last year, we do not really need to change the price, aprt from inflation.
It includes all design, toolings, labour, control and tests, and shipping supports.
It excludes aluminium conductor and freight.
We would propose to consider European made conductor if the coils are made in Europe; this would save time and money.
We could investigate this with the supplier of the CERN LHCb and Alice coils.
Some extra conductor should be foreseen for the setup of the winding and shaping tools (about 150 m)

All this is based on our experience with LHCb and Alice large aluminium coils for CERN LHC (see attached pictures).

## DELIVERY TIME

- 10 months from order providing that conductor delivery occurs within 6 months.

## PAYMENT CONDITIONS

- 30 % down with the order acknowledgement
- 20% after winding the 1st pancake
- 20% after factory acceptance tests
- 10% after delivery

Net 30 days from invoice date

**WARRANTY**

Our equipment is guaranteed for two years from the delivery.

We are at your disposal for any complementary information you may need and we remain,

Very faithfully yours.

J. L. LANCELOT
Managing Director

Quotation No.092906 September 29, 2006

Jack Jagger

Budgetary estimate for P-906 coils

| | |
|---|---|
| Jigs and Fixtures; | $ 74,081.00 |
| Winding and Curing; | $ 428,513.00 |
| Freight; | $ 9,260.00 |

Total cost less alum conductor; $ 511,854.00 USD — PREVIOUS B.T = 464,310

Delivery: weeks, ARO

Payment terms: TBD

Ken Wadsworth
Alpha Magnetics
Production Engineer
Ph: 510-732-6698 ext. 105
Fax: 510-732-6185
E-mail ken@alphamag.com

Subj: **Quote: Aluminum 1350 Hollow Conductor**
Date: 10/5/2006 12:19:53 P.M. Central Standard Time
From: spowe@alconex.com
To: jagger@anl.gov
CC: jaggerlisle@aol.com, dvalade@alconex.com

Hi Jack,

I have attached our quote for the Aluminum Hollow Conductor 1.600" x 1.600" with .700" Dia. as per your fax of September 20, 2006.
A total of 18,600 feet (46,500 lbs) will be supplied on between 16-20 reels (72"x54"x30").
Per our discussions this material will not be required until the first quarter of 2007.

Please review our quotation and respond with any further questions or comments.

We appreciate the opportunity to quote and look forward to working with Argonne on this project in the near future.

With Regards,

Steve Powe
Account Manager
ALCONEX Specialty Products, Inc.
Fort Wayne, IN 46809
1-800-443-6481
(260) 744-3446 ext 223
(260) 745-1938 Fax
email: spowe@alconex.com
www.alconex.com

ALCONEX SPECIALTY PRODUCTS, INC.
4204 West Ferguson Road
Fort Wayne, IN 46809

(260) 744-3446 Phone
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(800) 443-6481

# *PRELIMINARY HOLLOW QUOTATION*

SOLD TO
Jack Jagger
Argonne National Lab
9700 S. Cass Ave
Argonne IL 60439-4803
630 252-4839 Tel email: jagger@anl.gov

SHIP TO
Same

Date 10/05/06
Quoted By Steve Powe
PO#
Ship Date

BARE HOLLOW ALUMINUM ~ **1350 ALLOY** ~ O TEMPER

| | |
|---|---|
| Size | 1.600" x 1.600" |
| Inside Corner Radius | N/A |
| Outside Corner Radius | .100" |
| Wall Thk | .700" Dia (+/- .015) |
| Overall Tolerances | +/- .005 |
| Net Pounds | 47,500 |
| Reel Size | 72" x 54" x 30" |
| Alconex Job No. | N/A |
| Die* | New Dies required |

| | |
|---|---|
| Fabricator | **3.93** |
| Metal Base | **1.25** |
| Total Price/Pound | **5.18** |

The applicable metal base is applied at date of shipment.

Terms: Net 30 Upon Approval

Freight: FtW to Argonne Lab @ $900 (2 trucks @ $450 ea.)

Current Lead Time: Due 1st Qtr 2007

Reel Cost: $ 210 each

Die Charge: * $3200 (two dies)

## *SPECIAL NOTES:*

**6101 Aluminum not available**
**Freight: Prepaid and Add to Invoice or Collect**
**Total Length - 18,600 ft**
**Total Weight - 47,500 lbs**
**Require 16-20 Reels @ approx 3,000 lb ea.**
**Multiple lengths okay @ 700 ft (if production problems)**
**2.54 # per foot**
**1400 feet per reel**
**3500 # per reel**
**FLOW TEST - $80.00 per sample x 16 = $1280**
**PRESSURE TEST - $765.00 per sample x 16 = $12240**
**FLARE TEST - $10.00 per sample x 16 = $160**
**DIMENSIONAL TEST - Free**

**Estimated Total Cost to Argonne**
**@16 Reels: $267,190**
3 TESTS = $13,680
DIE CHARGE = $3,200
REEL COST = $3,360
FAB PRICE = $246,050
FREIGHT = $900

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Contract Review:

Production Approval: