Purchase Order

jf nuclear

Golden Hill Centre, School Lane, Leyland,
Lancashire, PR25 2TU
Tel: 01772 622200 Fax: 01772 622455
Email: contactus@james-fisher.com

To
VIDEORAY LLC
212 EAST HIGH STREET
POTTSTOWN
PENNSYLVANIA
UNITED STATES

Deliver to
James Fisher Nuclear Limited
Unit 14
Bridge End Industrial Estate
Egremont
Cumbria
UNITED KINGDOM

Purchase Order Number: POE-102425
Order Date: 30 October 2013
Project No: E024212

Item	Part	Description	Rev/Issue	Unit price	Quantity	Units	Due Date	Value
	FAO: NEIL SLINGER							
	BUYER: CARAGH PRITCHARD							
1	10-JFNP	Liquor Sampling Tool as per attached VideoRay Quote / proposal _20130912	1	7,250.0000	1.000	EACH	30 November 2013	7,250.00
2	10-JFNP	Non Recurring Engineering	1	15,000.0000	1.000	EACH	30 November 2013	15,000.00
3	10-JFNP	Delivery	1	342.0000	1.000	EACH	30 November 2013	342.00
4	10-JFNP	Please supply a material / test certificate	1	0.0000	1.000	EACH	30 November 2013	0.00
5	10-JFNP	Please supply a certificate of conformity	1	0.0000	1.000	EACH	30 November 2013	0.00

QA Requirements

Goods and/or Services shall not be accepted without the required certification and/or Certificate of Conformity for items requested on this order.

Material Certificate - Certificate of Conformity -

Invoice to: James Fisher Nuclear Ltd,
Golden Hill Centre, School Lane, Leyland, PR25 2TU
VAT No. GB 154 5523 70 EORI GB154552370014

Raised by: C. Pritchard
Authorised by:

Total value **22,592.00** USD

PURCHASE ORDER REQUEST

jf nuclear

PROJECT DETAILS & AUTHORISATION

Requested by: NEIL SLINGER

Authorised by: NEIL SLINGER

EFACS code / charge to: E024212

Sign:

SUPPLIER / SUB-CONTRACTOR DETAILS

Name: VIDEORAY

* Please attach any supplier / sub-contractor correspondance if provided (IE: quotes, emails etc)

Please attach NDA Flow Down Terms & Conditions with this order: Yes [ ] No [ ]

TIMESCALE

Date requested: 30.10.13

Required delivery date: ASAP

Order to place: Now [ ] Today [✓] This week [ ]

QUALITY ASSURANCE REQUIREMENTS

Acceptance by originator [ ]

Acceptance by insp department [ ]

QA docs required: Entered as line item

1. Material / test certificate	✓
2. Certificate of Conformity	✓
3. Calibration Certificate	
4. Report of thorough examination for lifting equipment	

Inform originator:

Originator to review PO before placement	
Once placed	
Once confirmed	
On receipt of goods	

PAYMENT TERMS

Supplier is on account? [ ]

Proforma invoice? [ ]

Credit card? [ ]

ITEM DETAILS

Qty	Part no. & Description	See Quote	Price Each	Sub Total
1	LIQUOR SAMPLING TOOL AS PER VIDEO RAY	20130912		£ -
	QUOTATION - PROPOSAL_20130912 ($7250.00			£4520-51
	NON RECURRING ENGINEERING ($15,000.00)			£9352-78
	DELIVERY ($342.00)			£213-25
				£ -
				£ -
				£ -
				£ -
				£ -
				£ -

DATE ORDERED [ ] ORDER NO: PoE-102425 TOTAL £14086-54

30-10-13

This proposal addresses the request from James Fisher Nuclear Limited, presented to VideoRay as Procurement Specification, "Report Number QD-3565-10-002 v01, Revision 01" for the following four (4) new tooling for use with a VideoRay Pro 4 system.

1. Supply of a Liquor Sampling Tool
2. Supply of a Manipulator
3. Supply of a Crack Detection System
4. Supply of a Surface Preparation Tool

Technical aspects, scheduling and prices of each tool will be described in detail in the sections below.

Additionally, the following information applies to all tools to be developed:

Each tool will be designed to operate independent of the other tools (or any other VideoRay accessory) and no attempt will be made to allow for simultaneous mounting and operation on the ROV.

VideoRay will design, manufacture, assembly, and host factory acceptance tests (both dry and wet) for each tool.

As part of the delivery of each tool, VideoRay will include a Lifetime Quality Records (LQR pack, see Appendix A) and all supporting documentation.

VideoRay will inspect and test the new tooling, in accordance with VideoRay's standard test procedures. Completed test documents, Calibration certificates and as-built drawings shall form part of the Lifetime Quality Records for the tooling along with the comprehensive Operations & Maintenance Manual.

All new tooling will undergo Factory Acceptance Testing (FAT) through all phases of operation to ensure the equipment is fit for purpose. JFN Personnel are welcome to be in attendance during FAT of new tooling.

A Technical file will be kept by VideoRay, containing the following;

- Risk Assessments
- Design Standards & Assessments
- Detail Drawings
- Calculations
- Test Reports & Certificates
- Technical Datasheets
- Installation/Instruction Manuals
- Declaration of Conformity/Incorporation

This pack will be formatted as per layout in Appendix A.

Wherever quoted, prices will be exclusive of VAT. All prices are quoted in US Dollars.

Relevant Standards and Regulations

The product and any bespoke design changes implemented shall be designed, manufactured, installed and tested to meet the full requirements of all the relevant British and European Standards, current Statutory Acts and Regulations (Or US equivalent standards). These shall include but are not limited to the following:

	Health and Safety at Work Act 1974
	Management of Health and Safety at Work Regulations 1999
	Workplace (Health, Safety and Welfare) Regulations 1992 (As amended 2002)
SSP1.70 (CDM)	Construction (Design and Management) Regulations 2007.
	Machinery Directive 2006/42/EC
	Manual Handling Operations Regulations 1992 (As amended 2002)
	Supply of Machinery (Safety) Regulations 2008
	Health and (Safety Signs and Signals) Regulations (As amended) 2007
	Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)
	Provision and Use of Work Equipment Regulation 1998 (PUWER)
BS EN ISO 12100:2010	Safety of machinery. General principles for design. Risk assessment and risk reduction.
BS EN 12100-2-2003	Safety of machinery. Basic concepts, general principals for design. Technical Principles, Basic Terminology, methodology
	The electricity at work regulations 1989 no. 635 (maintained by the HSE in the UK).
BS 7671:2008	Requirements for Electrical Installations 17th Edition
	EMC directive 2004/108/EC
BS EN 60204-1:2006	Electrical safety of machines – General requirements
	COSHH Regulations:2002 (As Amended 2003 and 2004)
	Noise at Work Regulations:2005 (As amended)

VideoRay shall meet the Essential Health and Safety Requirements (EHSR's) for the design and construction by means of self-assessment and compliance with the Regulations. This shall be presented by the preparation of a Technical File. VideoRay shall be responsible to detail how the new tooling complies with the EHSR's and to include this information in the Technical File, which is to be an auditable document.

Materials

All materials shall be segregated, stored and assembled in such a way that they do not become contaminated by incompatible materials that could affect their performance integrity.

All materials shall be new and no repaired material shall be used in the manufacture. All material shall be certified to BS EN 10204 (2004) 3.1. (Or US equivalent standards)

Welding Requirements

Welders to be qualified in accordance with BS EN 287-1:2004/ASME IX/AWS D1.1/AWS D1.2. Weld procedures shall conform to BS EN ISO 15607:2003/ASME IX/AWS D1.1/AWS D1.2/BS EN ISO 15614. (Or US equivalent standards)

Load Testing

If applicable, all lifting/mounting features and structure (Inclusive of ROV and Tooling) to be load tested to 2 x Safe Working Load (SWL).

Quality

The new tooling will be CE complaint and so marked accordingly.

Variations

All variations will be subject to an approved change control process and procedures.

Progress Reporting

VideoRay shall report on the following:

a. Progress since last reporting period
b. Future work in next reporting period
c. Technical issues
d. Program of work
e. Description of risks and mitigation activities

Monthly teleconference meetings will be held to report on progress for the above activities.

Technical File

A Technical file will be required to be kept by VideoRay, containing the following;

a. Risk Assessments
b. Design Standards & Assessments
c. Detail Drawings
d. Calculations
e. Test Reports & Certificates
f. Technical Datasheets
g. Installation/Instruction Manuals
h. Declaration of Conformity/Incorporation

Pack to be formatted as per layout in Appendix A.

Lifetime Quality Records

A Lifetime Quality Records pack will be required for JFN to retain, containing the following;

- As built drawings
- Calibration reports/ Final Inspection Report/ Non Destructive Testing reports.
- Release Note
- Comprehensive O&M manual

Pack to be formatted as per layout in Appendix B.

Drawing Pack

A Drawing Pack will be required containing the following;

Full Size, Wet signed prints of all nonstandard system drawings

Electronic copies of all system drawings (Autocad 2002)

Note - Drawings are not to be folded or blemished on delivery to JFN.

General Technical Requirements

Environment

The tooling will be deployed into the First Generation Magnox Storage Pond on the Sellafield site.

The pond water environment is as follows;

Temperatures	-	-10 to 30°C
PH	-	11.5
Radiation	-	C4/R4
Maximum Depth	-	6m

Design Life

The required design life is to be a minimum of 3 years.

Usage

The tooling will be cycled approximately 1500 times during its operational life (3 years).

Fittings

For reasons of operator safety, no 'Jubilee' type pipe clips are to be used. (This is to mitigate sharp edges causing cuts).

Surface Finish and Marking

All external surfaces to be smooth with minimum edges.

All external surfaces to be deburred with all sharp edges removed.

External faces to be marked with CE mark, System No. and maximum gross weight. All weights to be marked in kilograms.

All aluminum components to be Cerakoted

Maintenance

The tooling is to be designed so that all parts can be easily replaced or repaired.

External Mounting and Lifting Points

Tooling to be designed to be fitted to the underside of a VideoRay Pro 4 or Lateral Thruster assembly.

Electrical Connections

New tooling to be designed to connect electrically either via a PAM board or directly into the ROV external connector.

Oil

System must operate oil free (except for lubrication)

Delivery

VideoRay to allow for one meeting to cover factory acceptance testing, final inspection of the tooling and signing off the release note. Meeting to be held at the VideoRay site.

VideoRay shall be responsible for delivering the tooling (Suitable packaged) with all documentation and listed in Appendix A and B to the JFN Egremont facility.

Contract Management

Contract terms and conditions will be in accordance with MEC 3 option A Form of Sub Contract.

VideoRay General Contact Information:

VideoRay
212 East High Street
Pottstown, PA 19464 USA
610-458-3000
610-458-3010 fax

VideoRay Point of Contact Information for this contract:

Business:	Chris Gibson	chris.gibson@vidoeray.com	+1 610-458-3004
Operations and Production:	John Vestri	john.vestri@videoray.com	+1 (610) 458-3017
Technical:	Tom Glebas	tom.glebas@videoray.com	+1 (610) 458-3007

VideoRay Key Partners

Key vendors will be engaged to facilitate this project. All partners will have a good working relationship with VideoRay and will adhere to VideoRay standards and quality protocols.

Liquor Sampling Tool (LST)

Technical specifications and Functional Requirements

The Liquid Sampling Tool can be mounted either on the front or the underside of the ROV (Via current fixing arrangement or on a lateral thruster assembly). The size and weight of this LST will be minimized to prevent impacts to the ROV's operability. It will be designed so that when mounted, the ROV can be ballasted neutrally buoyant without the aid of additional flotation.

The LST will be capable of extracting 25ml of liquor (Dirty water with particulate and dosed to PH 11.5) and retaining the liquor whilst the ROV transits back to the launch point (Maximum distance from launch point to sample area is 150m) and manually recovered. The device that captures the liquor will be translucent, such that evidence of the retained liquor can be identified by the on-board ROV camera. The mechanism for activating the sampler will be mechanical.

The LST will be designed to be reused and can be easily installed and removed from the ROV manually.

The LST will be capable of operating to a depth of 8m of water, self-contained, and operated by the current ROV external power and signal capability.

Materials recommended for this tool will be identified at design freeze stage, to ensure compatibility for use in the Sellafield ponds.

All aluminum components will be Cerakoted.

Schedule

Sampler	Description	Duration
Design	Design and engineering phase	4 weeks
Prototype	Producing a prototype for testing	2 weeks
Beta Testing	Field testing	4 weeks
Production	Making the product production ready	4 weeks
First Article	Factory Acceptance	14 weeks ARO

Price: $7,250/each

Non Recurring Engineering: $15,000

Crack Detection System (CDS)

Technical specifications and Functional Requirements

A Crack Detection System (CDS) will be designed that can accurately measure cracks in the concrete internal wall of the Sellafield FGMSP.

The solution is seen, as collating several current VideoRay Pro 4 tools with new tools. These being, the under-slung 'HD camera', the 'Laser Range Finder', and 'mechanical antennae' (for offset regulation). The strategy would be for the HD Camera, Laser Range Finder and antennae to be set up and calibrated, on a neutrally buoyant ROV. The ROV would be deployed into the pond and driven to the site of the pond where the crack exists. The ROV would position itself, so the two antennae touch the wall of the pond and the ROV gentle thrusts forward against this stop (This would achieve two things; consistent repeatable offset and ensured squareness to the crack.) The aim would be to position the crack central about the camera image. The HD camera would take footage of the crack. This footage or images could be analyzed by software (TBD) that would break the HD image pixels down and measure each pixel between the crack edges. A revisit could be carried out 3 months later returning to the same spot and re-measure accurately to ascertain if the crack has expanded or not.

The CDS will be capable of operating to a depth of 8m of water, self-contained, and operated by the current ROV external power and signal capability.

Materials recommended for this tool will be identified at design freeze stage to ensure compatibility for use in the Sellafield ponds.

All aluminum components will be Cerakoted.

The design and manufacture of a separate marking device will be an option that can be added to this proposal/contract.

Schedule

Crack Detection	Description	Duration
Design	Design and engineering phase	12 weeks
Prototype	Producing a prototype for testing	8 weeks
Beta Testing	Field testing	6 weeks
Production	Making the product production ready	4 weeks
First Article	Factory Acceptance	30 weeks ARO

Price: $35,000/each

Non Recurring Engineering: $45,000

Surface Preparation Tool (SPT)

Technical specifications and Functional Requirements

A Surface Preparation Tool (SPT) will be designed that can be mounted on the front of the ROV. The size and weight of this device is to be minimized to prevent impacts to the ROV's operability. . It will be designed so that when mounted the ROV can be ballasted neutrally buoyant without the aid of additional flotation.

The SPT will be capable of removing the following from metal and concrete surfaces

a. Flaky Paint
b. Organic Growth
c. Sludge material
d. Rust

The SPT will be visible at all times by the on-board ROV camera.

The SPT will be easily installed and removed from the ROV manually.

The SPT will be capable of operating to a depth of 8m of water, self-contained, and operated by the current ROV external power and signal capability.

Controllability of the head rotate speed will be considered and determined before design freeze.

Materials required for this tool will be identified at design freeze stage to ensure compatibility for use in the Sellafield ponds.

All aluminum components will be Cerakoted.

Schedule

Cleaning Tool	Description	Duration
Design	Design and engineering phase	14 weeks
Prototype	Producing a prototype for testing	6 weeks
Beta Testing	Field testing	6 weeks
Production	Making the product production ready	4 weeks
First Article	Factory Acceptance	30 weeks ARO

Price: $14,750/each

Non Recurring Engineering: $32,000

Appendix A - Technical File

Please find below the Technical File section layout (The documents highlighted will be issued to JFN with the LQR file, the rest will be offered for review by JFN upon request)

1. OVERVIEW
    a. Design Brief
    b. Design Specification
2. RISK ASSESSMENTS
    a. CDM Risk Assessment
    b. Machinery Directive Compliance Risk Assessment
    c. Residual Risk Register
3. STANDARDS APPLIED
    a. List of All Standards used in design
4. ASSESSMENT TO STANDARDS
    a. Machinery Directive Compliance
    b. PUWER Compliance
    c. LOLER Compliance
5. DESIGN DRAWINGS
    a. All Drawings
6. CALCULATIONS
    a. Skid Frame Calculation Report
7. **TEST REPORTS**
    a. Pressure Test Procedures
    b. Load Test Procedures
    c. Factory Acceptance Test Procedure
8. **TECHNICAL DATASHEETS**
9. **INSTRUCTION MANUALS**
    a. Operation and Maintenance Instruction (Comprehensive version)
10. **DECLARATION OF CONFORMITY**

Appendix B - Lifetime Quality Record

Please find below the Lifetime Quality Record section layout (Included as part of system delivery).

1. DRAWING LIST
2. TEST PROCEDURES/CERTIFICATES
   a. Load and Pressure Test certificates.
   b. Factory acceptance test reports
3. DECLARATION OF CONFORMITY
   a. Proprietary Equipment Certificates of Conformity.
4. QUALITY PLAN
   a. Quality Plan (fully signed).
5. TQ/CONCESSIONS
   a. Technical Queries.
   b. Concessions.
   c. Design change documentation (including approvals and verification).
6. RELEASE CERTIFICATE
   a. Release notes / waivers.
7. SUB CONTRACTOR DOCUMENTATION