



THE INDUSTRY STANDARD IN UNDERWATER FILTRATION

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TO: KOZLODUY NPP
E-Mail: commercial@npp.bg
RE: RFQ for equipment for Kozloduy
DATE: June 7, 2019

QU4294

Per your request for quote, we are pleased to provide pricing for Tri Nuclear's underwater filter equipment for the Spent Fuel Storage Pool (SFSP) at the Kozloduy NPP.

Your RFQ asked for the following equipment:

- 1 device for capturing foreign materials underwater, complete with 25 filters/filter bags;
- 1 vacuum cleaner operating underwater, complete with 25 filters;
- 1 device for cleaning the surface layer of the water in the FFP, complete with 25 filters.

Tri Nuclear is proposing our Underwater Filter / Vacuum Model UFV-260-CE-VVER and Pool Skimmer Model SK-175 to meet your requirements.

- A single UFV-260-CE-VVER Unit will meet the requirements for both item 1 & 2. The UFV-260-CE-VVER was designed for capturing foreign material and vacuuming operations. There is no need for two separate units as the UFV-260-CE-VVER was designed to accomplish both functions.
 - See attached brochure TNC-002-BR - UFV-260-CE-VVER for information regarding the UFV-260-CE-VVER system
 - The listed voltage on the CB-*-FM-CE brochures is 400V / 50 hz. All Tri Nuclear motors and control boxes have a +/- of 10% on voltage. The control box will work in a range from 360V – 440V AC.
 - See attached brochure TNC-019-BR - VCPH Filters-CE for information regarding Tri Nuclear filter cartridges.
 - You will note that Tri Nuclear filter cartridges are nominally rated. The filter cartridge that Tri Nuclear will supply that meets your 10-micron absolute rating is our VCPH-0.3PE filter cartridge.
 - The Underwater Catch Basket can (Model UCB-1) can be used in conjunction with our filter cartridge for small object retrieval (See brochure drawing TNC-086-12 UCB-1 Brochure Dwg). Tri Nuclear recommends using them in conjunction with the filter cartridges when attempting to capture foreign materials underwater.
 - Tri Nuclear filter cartridges are packaged and sold in case qty only. There are 6ea per case.
- The Pool Skimmer, working in conjunction with the UFV-260-CE-VVER was designed to skim the surface water of the Reactor Cavity and Spent Fuel Pool.
 - The SK-175 is a floating skimmer with a diameter of 36in [914mm]
 - Using the SK-175 in conjunction with the UFV-260-VVER, eliminates another pumping unit and filtering device. The UFV-260-CE-VVER takes a suction on the SK-175 skimmer and filters the skimmed water.
 - See attached brochure TNC-016-BR - SK-175-CE for information regarding the SK-175 Pool Skimmer.

NOTE: At this time Tri Nuclear will not be able to provide on site training. We feel our equipment is simple enough to operate per the instruction manuals. Also, we are available for guidance as questions arise.

The following is a list of equipment to be provided:

Underwater Filter/Vacuum System, Model UFV-260-CE-VVER, Brochure TNC-002-BR - UFV-260-CE-VVER, <i>COMPLETE</i> with the following:			
TNC Part Number	Description	UFV-260-CE-VVER Qty	Materials of Construction
UFV-260H-CE-VVER	Basic Housing for UFV-260-CE-VVER system	1	304SS, 316SS, Buna N O-rings
PP-260SC-CE	Grundfos pump, 5HP/400V/3Ph/50Hz, w/cover & SC connector	1	304SS
CB-260-FM-CE	5 HP/400V/3Ph/50 Hz phase reversing control box with twist lock plugs and integral 0-2,000 LPM digital flow meter.	1	Fiberglass Enclosure
PSC-100P	PSC-100P Power Cable with twist lock plug (100ft [30.5m] 10/4 SO Cable w/ male twistlock plug)	1	10/4 SOOW Cable
PC-50-CE	PC-50-CE drop cable with female plug (50ft [12.4m] Cable w/ female connector)	1	10/4 <HAR> Cable
FM-SRD	Flow sensor with reinforced paddlewheel and 100ft [30.5m] cable with Amphenol connector.	1	Polypropylene
PH-2x50-EP	2in x 50ft [50mm x 12.24m] EPDM suction hose with MxF camlock couplers	2	EPDM hose with Polypropylene camlock couplers & 304SS crimped sleeves
SP-1	Stainless Steel Pool Pole, 1in [25.4mm] Dia x 10ft [3.05m] lg, with pinned coupler.	12	304 SS
SP-1x5	Stainless Steel Pool Pole, 1in [25.4mm] Dia x 5ft [1.52m] lg, with pinned coupler.	2	304 SS
SP-1x3	Stainless Steel Pool Pole, 1in [25.4mm] Dia x 3ft [0.91m] lg, with pinned coupler.	2	304 SS
SP-1x2	Stainless Steel Pool Pole, 1in [25.4mm] Dia x 2ft [0.61m] lg, with pinned coupler.	2	304 SS
BC-1	Buoyancy Float	14	304 SS
UT-1SPT	Stainless Steel Pool Pole "T" Handle	2	304 SS
UT-3/6	Floor Storage Rack for (6) Tri Nuclear Filter Cartridges	1	304 SS
UT-3H	Hanging Filter Storage Rack for (6) Tri Nuclear Filters	1	304 SS
UT-5SP	Floor Vacuum Cleaner Head	1	304 SS, / 316 SS, Polypropylene
UT-6SP	Hose to Pole Clamp	1	304 SS
UT-7	Stainless Steel Vacuum Nozzle	1	304 SS, / 316 SS
UT-9	Rope Filter Lift Tool	2	304 SS, / 316 SS
UT-10D	Free standing Mounting Panel for mounting Control Box	1	304 SS
UT-11	Suction Hose Standoff	2	304 SS, / 316 SS
UT-12	1in [25.4mm] Orifice Cap	1	Polypropylene

TNC Part Number	Description	Qty	Materials of Construction
SK-175	Pool Skimmer, 36in [914mm] w/ 2in [50mm] female camlock, for use with UFV-260-CE-VVER	1	304SS, 316SS, Polyester, Natural Latex Rubber
VCPH-0.3PE	Filter cartridge, 0.3 micron nominal / 10 micron absolute, 60 ft ² [5.6 m ²] polyester media, 6in x 30in [15.2 cm x 76.2 cm] lg, 6ea/cs	5 cs	Polyester, 304SS
UCB-1	Underwater Catch Basket insert for Tri Nuclear VCPH Filters, SS, perforated holes 3/32in [2.3mm]	4ea	304SS

Pricing on equipment:

QTY	TNC P/N	Description	Unit Price	Total Price
1	UFV-260-CE-VVER	Underwater Filter/Vacuum System, Model UFV-260-CE-VVER, COMPLETE	\$82,740	\$82,740
5	VCPH-0.3PE	Filter cartridge, 0.3 micron nominal / 10 micron absolute, 60 ft ² [5.6 m ²] polyester media, 6in x 30in [15.2 cm x 76.2 cm] lg, 6ea/cs	\$2,934	\$14,670
4	UCB-1	Underwater Catch Basket insert for Tri Nuclear VCPH Filters, SS, perforated holes 3/32in [2.3mm]	\$1,095	\$4,380
1	SK-175	Pool Skimmer, 36in [914mm] w/ 2in [50mm] female camlock, for use with UFV-260-CE-VVER	\$13,515	\$13,515
Total Equipment				\$115,305

Recommended Spare Parts:

QTY	TNC P/N	Description	Unit Price	Total Price
1	PP-260SC-CE	Grundfos pump, 5HP/400V/3Ph/50Hz, w/cover, SC connector, CB-260-FM-CE PHASE REVERSING control box with plugs and integral 0-2000 l/m digital flow meter, FM-SRD Digital Flow Sensor, PSC-100P Power Cable with twist lock plug and PC-50-CE drop cable with plug	\$25,825	\$25,825
2	PH-2x50-EP	2in x 50ft [50mm x 15.24m] EPDM suction hose with MxF camlock couplers	\$1,000	\$2,000
5	VCPH-0.3PE	Filter cartridge, 0.3 micron nominal / 10 micron absolute, 60 ft ² [5.6 m ²] polyester media, 6in x 30in [15.2 cm x 76.2 cm] lg, 6ea/cs	\$2,934	\$14,670
4	SK-S	Skimmer skirt with clamp, for use with the SK-175	\$400	\$1,600
Total Spare Parts Quotation				\$44,095

Total quote for equipment and spare parts: \$159,400 USD

Terms:

- Prices valid through 12/31/2019.
- Payment in US Dollars required prior to shipping goods. Wire Transfer or Certified Funds Delivered PRIOR to shipment.
- Shipping INCO Terms 2010; EXW, Ballston Lake, NY
Any delays or extra charges shall be the responsibility of the buyer.
Duty/Taxes shall be the responsibility of the buyer.
- Equipment will be packaged for all typical methods of transport (air / sea / land) and will be protected from damage during transport.

Sincerely yours,

Rick Russell
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