DWORSHAK DAM
BID ITEMS LIST
DRAFT TUBE BULKHEAD SEALS

ITEM	DESCRIPTION	QTY	UOM	PRICE	EXT PRICE
0001	Bay 4-6 Bottom Section Draft Tube Bulkhead Seal	7	Each		
0002	Bay 4-6 Top Section Draft Tube Bulkhead Seal	7	Each		
0003	Hollow Core Drill Bit	20	Each		

DWORSHAK DAM
TECHNICAL SPECIFICATIONS
DRAFT TUBE BUKHEAD SEALS

1.0 INTENT

The following specifications pertain to the purchase of new draft tube bulkhead seals and hollow core drill bits for U.S. Army Corps of Engineers, Walla Walla District, Dworshak Dam, Ahsahka, Idaho (Dworshak Project).

2.0 SCOPE

The successful Offeror shall be required to construct the rubber seals according to the specification in Section 3.0 below and ship the seals and drill bits to Dworshak Project as required in Section 7.0, Shipment and Delivery.

3.0 CUSTOM RUBBER SEAL SPECIFICATIONS (CLIN 0001, 0002)

3.1 General Requirements

3.1.1 Bay 4-6 Bottom Section Draft Tube Bulkhead Seal (CLIN 0001)

The Contractor shall deliver seven (7) complete seal sets matching dimensions and seal details in drawings DWP-1-5-2/2 and DWP-1-5-2/1.

3.1.2 Bay 4-6 Top Section Draft Tube Bulkhead Seal (CLIN 0002)

The Contractor shall deliver seven (7) complete seal set matching dimensions and seal details in drawings DWP-1-5-2/1.

3.2 Construction Requirements

3.2.1 Seal rubber as specified in section 3.3.1
3.2.2 The top and sides of each seal are J-Bulb molded seals, and the bottom is a flat-type seal.
3.2.3 All corners shall be hot factory vulcanized to match dimensions shown in the reference drawings.
3.2.4 Seals shall be supplied without bolt holes.

3.3 Construction Requirements

3.3.1 Rubber Seals

Rubber seals shall be of the full-molded type only. All corners shall be factory vulcanized, and all seal rubber shall be compounded of natural rubber, synthetic polyisoprene, or a blend of both, and shall contain reinforcing carbon black, zinc oxide, accelerators, antioxidants, vulcanizing agents, and plasticizers. Physical characteristics of the seals shall meet the following requirements:

PHYSICAL TEST	TEST VALUE	TEST METHOD SPECIFICATION
Tensile Strength	3,000 psi (min.)	ASTM D412, Method A
Elongation at Break	450 percent (min.)	ASTM D412
300 percent Modulus	900 psi (min.)	ASTM D412
Durometer Hardness (Shore Type A)	60 to 70	ASTM D2240
Water Absorption*	5 percent by weight (max.)	ASTM D471
Compression Set	30 percent (max.)	ASTM D395, Method B
Low Temp. Brittleness	Non-Brittle 3’ @ -40	ASTM D2137, Method A
Tensile Strength (after aging 48 hrs)	80 percent tensile strength	ASTM D572

	(min.)	
Ozone Resistance (70 hrs @ 40 deg. C at 300 PPHM Ozone and 20% strain on specimen)	No Cracks	ASTM D1149

4.0 DRILL BITS (CLIN 0003)

The contractor shall provide twenty (20) 5/8in Hollow Core Drill Bit with 1/2in Shank intended for cutting fastener holes in the new seals

5.0 DELIVERABLES

All seals and a dimensioned drawing of the seal (one per seal type) shall be delivered with the seals.

6.0 REFERENCE DRAWINGS

CLIN 0001, Bay 4-6 Bottom Section Draft Tube Bulkhead Seal
DWP-1-5-2/2 (J-bulb and wedge seal details on DWP-1-5-2/1 are typical to the bottom section)

CLIN 0002, Bay 4-6 Top Section Draft Tube Bulkhead Seal
DWP-1-5-2/1

7.0 WARRANTY

Each set of seals shall be covered by the manufacturer's standard warranty and not less than one year.

8.0 SHIPMENT AND DELIVERY

All items shall be delivered FOB to Dworshak Project within eight (8) weeks of contract award. The Contractor shall be responsible for packing and shipping the components in a manner that will preserve seal integrity and ensure undamaged and complete arrival to Dworshak Dam. The seals shall be shipped in a durable wooden crate cable of being offloaded via forklift. Deliveries shall only be made during normal Dworshak Project business hours, Monday–Thursday 6:30AM–5:00PM, excluding federal holidays.

All shipments shall be delivered to:

USACE Dworshak Project
Attn: Contract Performance Specialist
1428 Northfork Drive
Ahsahka, ID 83520
Ph. (208) 476-1296
Fax (208) 476-1227