

Responses to Pre-Proposal Clarifications from Proposer M/s CDigital on RFP/EPC Bidding Document of Package-III: Electro-Mechanical Works of ALHPP

Pre-Proposal Clarifications- RFP/EPC Bidding Document of Package-III: Electro-Mechanical Works of ALHPP

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TP-1	2026-03-11 PKG III Technical Provisions Generator bearing type specification 3.1.17 Bearings Page 3-6	Spec: Guide bearings shall be of the segmented multiple pad design, oil lubricated self-pumping type. The specification covers upper guide, thrust, and lower guide bearings with oil cooling Ambiguity: The specification does not clarify whether thrust bearings shall be rubber or tilting pad type, or specify pad material composition (white metal thickness, backing material). No thrust bearing temperature limits or maximum pad pressure are stated. Ambiguity: The specification does not clarify whether thrust bearings shall be rubber or tilting pad type, or specify pad material composition (white metal thickness, backing material). No thrust bearing temperature limits or maximum pad pressure are stated. Self-verification: Spec partially addresses this: "segmented multiple pad design, oil lubricated self-pumping type... high grade white metal, no less than 5mm thick, securely bonded to the pads"	What backing material type and specifications are required? What are maximum allowable thrust pad pressure and temperature limits?	The conventional material combination of white metal and steel backing shall be used as specified under the requirements of RFP/EPC Bidding Document. The maximum allowable thrust pad pressure and temperature limits shall be as per applicable International Standards allowable limits.

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TP-2	2026-03-11 PKG III Technical Provisions 3.2 Excitation System Page 3-20 to 3-22 Generator excitation system type and redundancy	Spec: Three (03) static excitation systems along with complete protection and three phase dry type transformers shall be supplied. The forced air-cooled thyristor bridge rectifier shall be controlled by stabilized firing circuits. A solid-state microprocessor based dual channel digital excitation controller with redundant controls shall be provided Ambiguity: While dual-channel redundancy is mentioned, the specification does not clarify: (1) whether redundancy is 1oo2 (1-out-of-2) or 2oo3 (2-out-of-3); (2) voting/arbitration logic for controller switchover; (3) synchronization requirements between channels; (4) automatic vs manual changeover protocol. Self-verification: Spec partially addresses this: "dual channel digital excitation controller with redundant controls... dual voltage transformer with a continuous voltage comparator to detect failure of either set of voltage trans..."	Is the architecture explicitly 1-out-of-2 voting or could it be 2-out- of-3? What are the specified fault detection and failover response times?	The excitation system shall be provided with a dual-channel redundant digital excitation controller. The redundancy philosophy and operational requirements shall be as follows: 1. Redundancy Philosophy: The system shall be based on a 1oo2 (one-out-of-two) redundant configuration, consisting of one active (duty) channel and one standby (hot standby) channel. 2. Voting / Arbitration Logic: The system shall include automatic health monitoring and arbitration logic to detect failure or abnormal behavior of the active channel. Upon detection, control shall be transferred to the standby channel without disturbance to Generator Operation. 3. The synchronization Between Channels: Both channels shall operate in fully synchronized mode, with continuous tracking of all input signals, reference

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				values, limiter outputs, and internal states to ensure bump less transfer during switchover. 4. Changeover Protocol: Automatic Changeover: The system shall automatically transfer control to the standby channel in case of failure of the active channel. Manual Changeover: Provision shall also be available for manual selection/changeover between channels during operation or maintenance. The final specification and philosophy shall be finalized during the design stage subject to the Employer's approval.
TP-4	2026-03-11 PKG III Technical Provisions 3.10 Cables Page 3-60 to 3-63	Spec: Power cables with extruded insulation shall be supplied. Cables shall be zero halogen (LSZH) and either of fire retardant or of fire resistance characteristics suitable to IEC 60332. All cables shall be armored.	Shall cables use XLPE or EPR insulation? Are fire retardant (IEC 60331-1) or fire resistance (IEC 60332) characteristics required, and what is the difference in the Contractor's scope?	As specified in Sub-Clause 3.10.3.1, all MV cables shall be XLPE insulated with LSZH sheath, and LV/Control cables shall also be LSZH, in line with IEC 60502. The same Sub-Clause requires fire-retardant or fire-resistant cables as applicable, with fire-resistant

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		Ambiguity: The specification does not clarify: (1) whether XLPE, EPR, or other insulation material is required; (2) distinction between fire retardant and fire resistance—which is required? (3) whether armor shall be copper or steel, single or double; (4) armor grounding method and continuity requirements	Shall armor be copper or steel, and shall single or double armoring be applied? What armor grounding continuity and bonding requirements must be met	cables for critical circuits as per IEC 60331. It is further stated that copper conductor and armoring shall be used, and all cable armour shall be properly earthed and bonded with full continuity throughout the system. The final detailed specification shall be finalized during the detailed design stage subject to the approval of Employer.
TP-5	2026-03-11 PKG III Technical Provisions 3.7.6 Batteries Page 3-49 to 3-51 DC/UPS battery and technology autonomy period	Spec: Lead acid batteries shall be provided sized for 10-hour discharge rate. End cell voltage shall be 1.80V. The batteries shall be of VRLA lead acid type in accordance with the latest applicable standard of IEC. Batteries shall have design life of 20 years at 25°C. Ambiguity: The specification fixes VRLA lead acid technology but does not: (1) state required autonomy (backup duration in hours) for full DC load; (2) specify whether 10-hour, 8-hour, or other discharge profile applies to the stated load; (3) clarify UPS	What is the minimum required DC system autonomy duration in hours at full load without AC mains?	10 hours minimum DC system autonomy duration at full load without AC mains shall be provided.

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		backup autonomy (stated as 90 minutes in §4.7.4 but not linked to battery sizing); (4) specify battery room ventilation class or hydrogen detection requirements. Self-verification: Spec partially addresses this: "Batteries shall have design life of 20 years at 25°C ambient temperature... guaranteed operation for 10 years under rated operating conditions... Capacity of each battery Ah 500 (P..."		
TP-6	2026-03-11 PKG III Technical Provisions 3.4.4 Functional Specifications Page 3-27 Transformer cooling type and OLTC operation mode	Spec: The cooling type shall be ONAN/ONAF and the transformers shall be provided with fire detection and alarm system. The transformers shall be equipped with a motor- operated 17 position on-load tap changer (OLTC) on the HV side, with a regulating range of $\pm 8 \times 1.25\%$. The OLTC shall be manually controlled by the operator, not having an automatic voltage regulator. Ambiguity: The specification does not clarify: (1) under what conditions ONAF	At what winding temperature (in °C) shall ONAF cooling fans automatically engage? Shall fans be modulating or full on-off? What is the OLTC stepping time and maximum motor torque requirement? Shall the 132 kV neutral be solidly earthed at the transformer star point, or via a separate	The cooling fan design will be proposed by the Transformer Manufacturer and will be finalized during detail design stage. The star point of the 132 kV windings shall be solidly earthed as specified in the RFP/EPC Bidding Document.

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		cooling switches on (temperature setpoint, fan duty cycle); (2) whether fans are modulating or on-off; (3) OLTC mechanical stepping time and motor stall torque; (4) whether transformer neutral earthing point shall be at the star point or via a neutral grounding transformer.	neutral earthing transformer?	
TP-7	2026-03-11 PKG III Technical Provisions 3.5.1 Scope Switchgear insulation type (GIS vs AIS) and IP rating	Spec: Three (03) medium voltage switchgears complete in all respects. The Generator Circuit Breakers will be of vacuum type as insulating and interrupting medium. Switchgear shall be of GCB with compartments provided for connection with segregated phase bus (SPB). Ambiguity: The specification does not define: (1) whether switchgear cabinet shall be air-insulated (AIS) or gas-insulated (GIS); (2) minimum IP rating for indoor/outdoor installation; (3) whether switchgear shall be modular or monolithic; (4) arc flash incident energy rating or arc flash PPE category requirements.	Shall the 11 kV switchgear be air-insulated (AIS) or gas-insulated (GIS), and what is the rationale? What minimum IP rating is required for the installed environment (indoor powerhouse)? Shall the design be modular cubicles or a single integrated unit? What arc flash incident energy level (in kA at 12 inches) must be declared?	The 11 kV Switchgear shall be SF6 Gas type for generating units. All other except generating units shall be vacuum type. The IP rating and the other arrangement detail shall be finalized during the detailed design stage subject to the approval of Employer. The same shall be included in Addendum No. 01 to RFP/EPC Bidding Document which will be uploaded on PPRA EPADS V2.0 in due course of time.

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TP-8	2026-03-11 PKG III Technical Provisions §4.5.1 Plant Control System (PCS) Page 4-4 SCADA/HMI software vendor and licensing model	Spec: Two (2) operator workstations with double LED monitors and alarm printers; one (1) Engineering Workstation with LED type double-monitors and laser color printers. The Contractor shall provide as part of the system documentation any required software licenses necessary for the Employer's perpetual, unrestricted use and application. Ambiguity: The specification does not identify: (1) specific SCADA/HMI software product or vendor (e.g., FactoryTalk, InduSoft, Wonderware); (2) whether software must be source- code escrow protected; (3) number of operator and engineering licenses to be provided; (4) support/maintenance period and SLA for software updates.	Which SCADA/HMI platform is mandatory (FactoryTalk, InduSoft, Wonderware, or open)? Shall perpetual, unrestricted source code escrow be provided for all software? How many concurrent operator licenses and engineering licenses shall be included? What is the required software support and maintenance SLA period?	The PCS software shall be Microsoft Windows based in accordance with the applicable International Standards. The other details will be finalized during detailed design stage subject to the approval of Employer.
TP-9	2026-03-11 PKG III Technical Provisions 3.1.14 Fire Protection	Spec: Generators shall be provided with a fire extinguishing system of inert gas and water spray type. The fire protection	Which specific inert gas medium is mandated (CO ₂ , N ₂ , FM200, Novec)? What is the	The Generator Fire Protection System shall comply with the requirements of NFPA 851 and relevant NFPA standards. The inert gas, fire detection

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	System Page 3-5 Fire detection and suppression system type in generator	system shall comply with NFPA 851 National Fire Protection Association. The Generators shall also be provided with fire detection and alarm system. Ambiguity: The specification states both inert gas and water spray but does not clarify: (1) which inert gas (CO2, N2, FM200, Novec); (2) whether both systems are simultaneous or selective; (3) fire detection sensor type (spot heat, linear, aspiration); (4) activation sequence and manual override provisions; (5) supplier requirements for NFPA 851 certification.	activation sequence and logic for inert gas and water spray	sensor type and system operation shall be finalized during the detailed design stage subject to the approval of Employer. A multi-criteria fire detection system and both automatic and manual activation with safety interlocks shall be provided. The final specification and system philosophy shall be finalized during the detailed design stage subject to the approval by the Employer.
TP-12	2026-03-11 PKG III Technical Provisions 3.4.4 Functional Specifications Page 3-27 Transformer oil preservation and conservator type	Spec: All generator step-up transformers shall be oil- immersed, (ONAN/ONAF), with the oil preservation system of the constant pressure conservator type, with a flexible diaphragm to preclude direct contact of oil with air. Ambiguity: The specification does not clarify: (1) whether Buchholz relay or gas-oil discriminator is required; (2) diaphragm	Shall a Buchholz relay with gas-oil discriminator be provided as a separate device? What material and expected service life (in years) shall be specified for the conservator diaphragm? What nitrogen blanket pressure (if any) shall be maintained above	The Double Float Buchholz Relay with Ground-Level Gas Sampler shall be provided. Diaphragm material shall be NBR with minimum expectancy life of 20 years. Generally, 0.05 to 0.07MPa pressure shall be used.

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		material (EPDM, nitrile, FKM) and expected life; (3) conservator pressurization range and relief settings; (4) air breather type and desiccant replacement frequency; (5) Nitrogen blanket requirement and initial charge pressure.	the oil surface, and what is the initial charge pressure when the transformer is cool? What is the air breather desiccant replacement interval?	Maintenance-Free Breather (Electronic) type shall be used. However, all these details shall be reviewed and finalized during detailed design stage subject to the approval of Employer.
TP-13	2026-03-11 PKG III Technical Provisions §3.5.7 Circuit Breaker Page 3-37 onwards Circuit breaker tripping time and auxiliary power supply	Spec: The Generator Circuit Breakers will be of vacuum type as insulating and interrupting medium and complying with IEC 62271-100 and IEC 62271-200. The Generator Circuit Breakers will be suitable for synchronizing duties and provided with interlocks. Ambiguity: The specification does not state: (1) maximum tripping time (contact separation to arc extinction); (2) opening and closing time requirements; (3) DC supply voltage (110V, 125V, 220V) for trip coils; (4) closing spring energy source and pre-compression limits; (5) mechanical life expectancy (number of operations).	What is the maximum circuit breaker tripping time (from trip command to contacts separated) in milliseconds? What DC supply voltage (110V, 125V, or 220V) shall be used for trip coils, and shall automatic changeover between normal and DC backup supply be provided? What is the mechanical life expectancy in number of operations (at rated current and lightning impulse levels)?	The DC supply voltage shall be 220 VDC as specified under the requirements of RFP/EPC Bidding Document. All other details shall be varied from manufacturer to manufacturer and will be reviewed and finalized during detailed design stage subject to the approval of Employer.

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TP-15	2026-03-11 PKG III Technical Provisions 1.2.6 Pressure Oil System Page 1-24 Governor oil pressure system filtering and contamination limits	Spec: Piping for the Pressure Oil System shall be of steel or copper and shall comply with ISO 1219 design recommendations. Ambiguity: The specification references ISO 1219 but does not define: (1) oil filtration class (ISO 4406 code, e.g., 16/14/11); (2) whether main pump discharge or system-wide filtration is mandatory; (3) filter element material and micron rating; (4) contamination limits for emergency closure system reliability; (5) oil sampling and condition monitoring requirements.	What is the required oil cleanliness class (ISO 4406 code) that must be maintained in the governor pressure system? Shall a 5- micron or 10-micron filter be placed on the main pump discharge, and shall a return-line or offline filtration system be provided? What is the maximum allowable particulate contamination (particles >4µm, >6µm, >14µm per ml) before remedial action is required? Shall oil condition monitoring (trend analysis) be mandatory?	1. 10 µm is recommended 2. Particulate size Should be less than 6 µm However, it will be finalized during detailed design stage subject to the approval of Employer.
TP-16	2026-03-11 PKG III Technical Provisions	Spec: Grounding System shall be designed and installed as per applicable	Shall the grounding system be designed per IEEE 80	Please note that grounding calculations and grounding mesh

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	6.23.3.9 Grounding System Page 6-148 onwards Protection system grounding (IEEE 80 vs IEC 62305) and touch voltage limits	international standards to ensure safe operation and protection of personnel and equipment. Ambiguity: The specification does not clarify: (1) which grounding standard applies (IEEE 80 for power plants, IEC 62305 for lightning protection, or both); (2) assumed soil resistivity (ρ , ohm-m) for design; (3) acceptable step voltage and touch voltage limits (V, 50kg body weight); (4) grounding electrode depth and spacing requirements; (5) periodic testing interval and acceptance criteria.	(for AC systems) and/or IEC 62305 (for lightning protection)? What soil resistivity (ρ) shall be assumed for design, and what is the measured soil resistivity at the site? What are the acceptable step and touch voltage limits for personnel safety (at 50 kg body weight)? What is the required grounding electrode resistance to remote ground, and what is the testing interval post-commissioning?	activity will be performed by the EPC Contractor of Package-I: Civil & Auxiliary Services Works and the same has been mentioned in the RFP/EPC Bidding Document and the same shall be followed.
TP-17	2026-03-11 PKG III Technical Provisions 1.6.3.1 Hydraulic Hoist Page 1-17 onwards Hydraulic hoist cylinder lifting and lowering speed specification	Spec: The hydraulic hoist shall be provided with a hand pump and shall be suitable for lifting and lowering the generator rotor and other equipment weighing up to 100 tonnes. Ambiguity: The specification does not define: (1) lifting speed (mm/s or m/min)	What lifting speed is required (mm/s), and what is the maximum operating pressure of the hydraulic system? Shall lowering be controlled (counterbalance valve) or free-fall, and what is the maximum descent speed? What is the	It shall be provided by the Proposer as per International Standard and good engineering practice.

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		required; (2) lowering speed and descent control (free-fall vs controlled); (3) pressure relief settings and override logic; (4) manual pump capacity and operating strokes per lift operation; (5) lifting height range and intermediate position locking.	pressure relief setting, and shall a pilot-operated relief protect against overload? How many hand pump strokes are needed per lift cycle, and over what height range shall lifting be possible?	
TP-18	2026-03-11 PKG III Technical Provisions 4.9.4 Data Acquisition and HMI Functions Page 4-21 onwards SCADA cyber security requirements and IEC 62443 level	Spec: The Control System Software shall include all normal Data Acquisition- and HMI- software with firewall system for the interconnection between the SCADA/DMS/ HMI and other networks. Ambiguity: The specification mentions firewall but does not define: (1) required IEC 62443 Security Level (SL1 to SL4); (2) user authentication method (password, MFA, LDAP); (3) audit logging and retention period; (4) encryption standards for SCADA communications; (5) intrusion detection/prevention requirements.	What is the required IEC 62443 Security Level (SL1–SL4)? Shall multi-factor authentication (MFA) or single-factor (username/password) be used for operator access? What is the minimum audit log retention period (days/years)? Shall SCADA traffic be encrypted (AES-256 or equivalent), and shall TLS 1.2+ be mandatory for remote access? Shall intrusion	The IEC 62443 Security Level SL-3 shall be required. The other details related to the PCS software, data acquisition and firewall system will be finalized during the detailed design stage subject to the approval of Employer.

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			detection/prevention systems be provided?	
TP-19	2026-03-11 PKG III Technical Provisions 3.11 Emergency Diesel Generating Units (EDG) Page 3-56 onwards Alternate energy source (fuel type and capacity) for EDG system	Spec: The EDG set room ventilation shall be in coordination with HVAC design, and the tank shall comply with NFPA-31 'Installation of Oil Burning Equipment'. Ambiguity: The specification references NFPA-31 but does not define: (1) EDG fuel type (diesel, natural gas, dual-fuel); (2) daily fuel tank capacity and autonomy hours; (3) starting battery capacity (Ah) and number of cells; (4) emergency shutdown protocol and interlocks with main switchgear; (5) EDG load shedding sequence and priority classification of loads.	What fuel type (diesel, natural gas, or dual-fuel) shall the EDG use? What is the required fuel tank capacity to provide autonomy for how many hours of continuous operation at 75% load? What is the starting battery capacity (Ah) and number of cells? Shall there be interlocks between EDG startup and main circuit breaker position? What is the load shedding sequence, and are there priority classifications for essential vs non-essential loads?	The equipment titled Emergency Diesel Generating Units (EDG) which clearly specified the fuel type. Other details shall be finalized during detailed design stage subject to the approval of Employer after analyzing the load list and details by the Manufacturers.
TP-20	2026-03-11 PKG III Technical Provisions	Spec: Open loop cooling system is foreseen; however, the Contractor shall be	Shall the cooling water pumps be duty/standby	It has been clearly mentioned in the RFP/EPC Bidding Document that the

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	2.2 Cooling Water System Page 2-1 onwards Auxiliary water system pump redundancy and treatment method	required to carry out detailed studies for consideration in the design of the cooling water system based on requirements. Ambiguity: The specification does not clarify: (1) whether pump redundancy (N+1) or duty/standby arrangement is required; (2) water intake quality assumptions (turbidity, pH, bacterial count); (3) treatment method (filtration class, chemical dosing, UV sterilization); (4) system pressure class and materials for raw water lines; (5) heat rejection load (MW, BTU/h) for cooler sizing.	(N+1 redundancy) or single-pump design? What raw water quality standards (turbidity, pH, total dissolved solids, bacterial count) shall be assumed? Shall the system include 5-micron filtration, chemical pre-treatment (scale inhibitor, biocide), or UV sterilization? What is the design heat rejection load (MW) that the cooling system must handle at rated conditions? What pressure class (PN6, PN10, PN16) shall raw water piping be rated for?	detailed studies for the design of the Cooling Water System as per requirement of Power Plant shall be carried out by the EPC Contractor. However, for safe and steady operation, standby arrangement for pump for redundancy purpose is proposed. This shall be included in Addendum No. 01 to RFP/EPC Bidding Document which will be uploaded on PPRA EPADS V2.0 in due course of time .
TP-21	2026-03-11 PKG III Technical Provisions 4.9.3 Metering and Billing Functions Page 4-20 onwards	Spec: The Plant Control System shall include metering functions with accuracy in accordance with applicable standards. Ambiguity: The specification does not	What accuracy class (e.g., 0.2, 0.5 per IEC 61869) is required for current transformers and voltage transformers used in the metering system? Shall the	Please follow the requirements of the RFP/EPC Bidding Document as specified under applicable latest International Standards. The metering system shall comply with revenue-grade accuracy.

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	Metering transformer accuracy class and measurement uncertainty	specify: (1) CT and VT accuracy classes (0.2, 0.5, 1.0, or metering grade); (2) whether Revenue Meter Grade (RMG) or utility-standard metering is required; (3) measurement uncertainty allowance ($\pm 0.5\%$, $\pm 1.0\%$); (4) apparent energy (MVAh), reactive energy (MVarh), and distortion energy (MWh harmonic) recording requirements.	metering system comply with revenue-grade accuracy or utility standards? What is the acceptable overall measurement uncertainty ($\pm 0.5\%$ or $\pm 1.0\%$)? Shall the metering panel record real energy, reactive energy, and harmonic distortion energy separately?	
TP-22	2026-03-11 PKG III Technical Provisions 3.10 Cables Page 3-60 onwards Control cable type and fiber optic vs copper specification	Spec: The main communication buses of the Plant Control System shall be of optical fiber. The data communication system for the LCUs shall be arranged as dual optic fiber network. Ambiguity: While fiber optic is mandated for main buses, the specification does not clarify: (1) whether control and instrumentation signals (4–20 mA, 0–10 V) are copper or fiber; (2) pair count and EMC	What cable type/category/fiber mode required for analog control signals? What is minimum separation distance from HV power cables?	The fiber mode shall be used as specified under the requirements of the RFP/EPC Bidding Document. Furthermore, distances from HV Power cables shall be followed as per allowable limits specified under International Standards specified in the RFP/EPC Bidding Document.

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		classification; (3) single-mode vs multi-mode fiber choice and wavelength; (4) cable routing and segregation from power cables (physical separation distance).		
TP-23	2026-03-11 PKG III Technical Provisions 1.1.6 Speed and Balance Page 1-3 Runaway speed calculation assumptions and mechanical stress limits	Spec: The complete rotating assembly (turbine and generator) shall be designed to accommodate the maximum runaway speed, which can occur under any steady or transient condition. The maximum unit stresses for any rotating part at runaway speed shall not exceed two-third (2/3) of the respective material yield strength. Ambiguity: While stress limits are stated, the specification does not clarify: (1) whether runaway speed of 655 rpm includes or excludes generator friction/windage losses; (2) whether dual-load rejection (MIV + guide vane failure) is the design case; (3) material yield strength values assumed for different components (runner, shaft, etc.); (4) dynamic impact factor for transient conditions.	Is runaway speed (655 rpm) based on simultaneous MIV+guide vane closure failure or MIV failure alone? What material yield strengths (MPa) apply to runner/shaft/stay ring? Shall dynamically stress amplification factor be applied?	1. It will be based on MIV+Guide vane closure failure as Worst Case scenario 2. Should be same 2/3 of material yield strength. 3. Yes, dynamically stress amplification factor will be applied in the calculations

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TP-24	2026-03-11 PKG III Technical Provisions 6.3 132kV Remote End Page 6-35 onwards Switchyard 132 kV earthing transformer requirements	Spec: The neutral point of the 132 kV windings shall be solidly earthed per the specifications and all requirements in these Technical Provisions. Ambiguity: While solid earthing is required, the specification does not clarify: (1) whether a separate earthing transformer is required or direct solidly-earthed neutral; (2) if a transformer is used, its kVA rating and impedance; (3) earth-fault current limitation (whether neutral is directly grounded or via resistor); (4) whether the transformer windings are delta-delta or delta-Y with tertiary.	Shall the 132 kV neutral point be directly connected (solidly earthed) to a grounding electrode, or shall a separate earthing transformer be provided? If an earthing transformer is required, what is its kVA rating, and what is the impedance (ohms, %)? Shall the earthing point be directly grounded or protected by a neutral grounding resistor, and if so, what resistance value (ohms) limits earth-fault current to acceptable levels?	132 kV neutral point shall be directly connected (solidly earthed) to a grounding electrode. No separate earthing transformer or neutral grounding resistor is required.
TP-25	2026-03-11 PKG III Technical Provisions 1.1.16.3 Cavitation Guarantees Page 1-11 Turbine cavitation	Spec: Cavitation guarantees shall be given based on the plant sigma (NPSH) and shall be evaluated in accordance with IEC 60609-1.	What is acceptable cavitation erosion rate (mg/h or mm/year)? What is maximum pit depth after 1 year? At what sigma is damage unacceptable?	The EPC Contractor, will provide Cavitation Guarantees as per International Standard IEC 60609-1.

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	guarantees and damage evaluation criteria	Ambiguity: While reference to IEC 60609-1 is made, the specification does not define: (1) acceptable cavitation erosion rate (mg/h or mm/year); (2) acceptable pit depth (mm) after operating period; (3) cavitation severity zone boundaries (sigma values at which erosion becomes unacceptable); (4) inspection method (visual, profilometry, ultrasonic thickness). Self-verification: Spec partially addresses this: "Cavitation guarantees shall be given based on the plant sigma (NPSH) and shall be evaluated in accordance with IEC 60609-1...8,000 operating hours from the date each unit is placed..."	What inspection method is required?	
TP-26	2026-03-11 PKG III Technical Provisions 3.1.15 Cooling System Page 3-5 to 3-6 Generator cooling water system material	Spec: All equipment and materials related to the cooling system of each generator such as valves, fittings, strainers, pipe-work etc. shall be provided by the Contractor. With one complete heat exchanger out of service, the maximum	Shall the cooling water be treated (demineralized, pH-buffered) or raw lake water? What cooling water quality limits (conductivity $\mu\text{S/cm}$, pH, total hardness mg/L) must be met to	Refer Sub-Clause 1.5.1 Cooling Water System of Technical Provisions Part-II Volume-II of RFP/EPC Bidding Document of Package-III, It has been specified that the Open loop cooling water system has been foreseen; however, due to the quality of the

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	compatibility and treatment	continuous output shall be maintained. Ambiguity: The specification does not clarify: (1) cooling water source (local raw water or demineralized); (2) expected water chemistry (conductivity, pH, hardness limits); (3) material selection for coolers (aluminum, stainless steel, cupronickel);(4) fouling factor and design heat transfer coefficient; (5) coolant additives (inhibitor, biocide) requirement and concentration limits.	prevent cooler fouling and corrosion? Shall cooler tubes be aluminum, stainless steel (304/316), or cupronickel (90/10)? What fouling factor (m ² K/W) is assumed for cooler sizing, and what is the minimum heat transfer coefficient (W/m ² K)?	water, AHMC propose close loop cooling water system. It shall also be added in the Addendum No. 1. But it is recommended that the EPC Contractor must carried out his own water, petrographic and sedimentation analysis where necessary for verification and confirmation of contractual guarantees. The EPC Contractor shall be required to take sedimentation into consideration in the design of the cooling water system. The cooler tubes shall be made of Titanium material. Other data will be finalized during detailed design stage subject to the approval of Employer. The same will be included in Addendum No. 01 to RFP/EPC Bidding Document which will be uploaded on PPRA EPADS V2.0 in due course of time.
TP-27	2026-03-11 PKG III Technical Provisions	Spec: The transformers shall be equipped with a motor- operated 17 position on-load tap changer (OLTC) on the HV side, with a	Shall OLTC tap control be local (at the transformer) or remote (from central control room)? What is the	The OLTC shall be fully automatic operated with provision of remote and local manual operation as specified in the RFP/EPC Bidding Document.

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	3.4.4 Functional Specifications Page 3-27 Transformer on- load tap changer (OLTC) manual control interface and settings	regulating range of $\pm 8 \times 1.25\%$. The OLTC shall be manually controlled by the operator. Ambiguity: While manual control is specified, the specification does not define: (1) control logic at the Local Control Unit or central control room; (2) tap position feedback mechanism (resolver, encoder, contacts); (3) step delay between tap changes (to prevent hunting); (4) remote indication of tap position and voltage at remote sites; (5) tap position limit switches and mechanical constraints	tap position feedback mechanism (resolver, absolute encoder, or mechanical counters)? What is the minimum time delay between consecutive tap changes to prevent hunting and transformer stress? Shall remote indication of the current tap position and secondary voltage be provided to the control system? What are the mechanical limits (forward/reverse bounds) to prevent tap position overflow?	
TP-28	2026-03-11 PKG III Technical Provisions 3.1.20.4 Unit Reliability Run Test Page 3-8 Commissioning test duration and performance	Spec: Stable and reliable operation for at least 24 hours at varying outputs between maximum possible and minimum possible allowable capacity of the unit without any defects. Ambiguity: The specification requires 24-	Is 24-hour test continuous or accumulated? What defines a defect requiring re-test (e.g., bearing temp $>60^{\circ}\text{C}$, vibration $>10 \text{ mm/s}$)? Are performance guarantee tests part of	The Proposer is required to follow the requirements of RFP/EPC Bidding Document. Any other details shall be finalized during detailed design stage subject to the approval of Employer.

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	guarantee test procedure	hour reliability test but does not clarify: (1) whether continuous 24 hours or 24 hours of cumulative operation over multiple days; (2) failure criteria and acceptable alarm/alert thresholds during test; (3) whether performance guarantee tests (efficiency, cavitation, noise) are part of or separate from commissioning; (4) defect correction and re-test requirements if failures occur. Self-verification: Spec partially addresses this: "Stable and reliable operation for at least 24 hours at varying outputs...Stable and reliable operation within a continuous 72 hours period, at least 10 successive cycles of startin..."	commissioning or separate?	
TP-29	2026-03-11 PKG III Technical Provisions 4 Plant Control and Instrumentation System Page 4-1 onwards Operation and	Spec: The Contractor shall provide comprehensive training and documentation for operation and maintenance of all supplied equipment. Ambiguity: While training is required, the specification does not specify: (1) number	How many trainees shall be trained for each discipline (operations, mechanical maintenance, electrical maintenance), and shall training be at the OEM factory, on-site, or	The EPC Contractor shall provide comprehensive training for operation and maintenance personnel. As a minimum, 5–8 trainees per discipline (Operations, Electrical, Mechanical, I&C) shall be at both OEM works and Project site, with a minimum duration of

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	Maintenance training scope and location	of trainees per discipline (operations, maintenance, electrical, mechanical); (2) training location (OEM factory, site, or combination); (3) training duration (days/weeks) and course content breakdown; (4) language (English, Urdu, or both); (5) post-commissioning refresher training interval.	both? What is the total training duration (man-days), and what are the specific modules to be covered (e.g., SCADA operation, turbine maintenance, protection relay settings)? Shall training materials be in English, Urdu, or both? Shall annual refresher training be provided, and if so, for how many days?	1–2 weeks per system, covering operation, maintenance, troubleshooting, and safety.] The training shall be conducted in English language. The detailed training plans shall be submitted for Employer's review and approval.
TP-30	2026-03-11 PKG III Technical Provisions 3.4.8 SERGI Transformer Fire Protection System Page 3-28 Transformer fire protection system activation logic and response time	Spec: Transformers shall be equipped with transformer explosion prevention system of SERGI type complete with sensors, control unit, and interfaces. Ambiguity: While SERGI system is specified, the specification does not clarify: (1) SERGI sensor detection method (pressure rise rate, absolute pressure threshold); (2) actuation logic (single-sensor or dual-sensor logic); (3) gas	How does the SERGI system detect faults: by monitoring the rate of pressure rise (bar/s) or absolute pressure threshold (bar)? Shall activation require a single sensor signal or dual-sensor coincidence logic? What is the gas injection response time (milliseconds) from	The Proposer's queries are irrelevant at this stage. The SERGI design will be coordinated with the Transformer Manufacturer. These details shall be finalized during detailed design stage subject to the approval of Employer.

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		injection timing and pressure relief coordination; (4) manual activation capability during operation; (5) post-discharge recovery/reset procedure.	detection to gas release? Shall manual activation (via push-button or remote) be available when the transformer is in service? How is the system reset after discharge, and what is the lead time for recharge?	
TP-31	2026-03-11 PKG III Technical Provisions 6.1 Scope of Work — 132 kV Switchyard and 132 kV Line End Bays Page 6-2 (BD-ALHPP-03 (V2-II)) Switchyard civil works — control house building and main ground grid	Spec: "The civil works required for all the above-mentioned facilities (except for Two (2) 132 kV Line End Bays at 132 kV Aliabad Regional Grid Station) are not a part of E&M Scope. The Civil Scope (except two (02) 132 kV Line End Bays at 132 kV Aliabad Regional Grid Station) shall be provided by Civil Contractor (Package-I)." — §6.1, page 6-2. §6.1(a)(10) states E&M scope for switchyard grounding covers "Only Equipment Protective Earthing Connection". §6.1(a)(20) refers to "cable trays, ladders, conduits and accessories inside the switchyard and control house building/generator room".	Please confirm: (a) that the construction of the 132 kV switchyard control house itself (foundations, walls, roof, doors, windows, HVAC, lighting, and internal fit-out up to the finished slab ready to receive E&M cabinets) is wholly within Package-I (Civil Contractor) scope; and (b) that the buried main ground grid of the 132 kV switchyard (ground mat	The scope of construction of 132 kV Switchyard, Control House building, Grounding, HVAC and Lighting system etc. has been covered under EPC Contractor of Package-I: Civil & Auxiliary Services Works. The protective earthing connections from grounding mesh/risers to equipment/metallic structures and lightning protection of 132 kV Switchyard bays shall be the responsibility of Package-III EPC Contractor.

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		Ambiguity: §6.1 clearly allocates civil works for the main 132 kV AIS switchyard to Package-I (Civil Contractor) and CDigital accepts this. Civil works for the main 132KV AIS switchyard at the powerhouse are not clear. Whether it has to be carried out by the civil contractor or the E&M contractor Two sub-scopes within that boundary are not explicitly addressed: (i) The switchyard control house building itself (foundations, walls, roof, doors, HVAC, internal fit-out, floor trenches and cable risers) is referenced in §6.1(a)(20) as a facility that houses E&M equipment, but the spec does not explicitly state which Package designs and constructs the building shell. A literal reading implies Package-I, but this is on the critical path for E&M installation and commissioning and needs explicit confirmation. (ii) §6.1(a)(10) uses the word "Only" to limit E&M grounding scope to the equipment	conductors, ground rods, earth pits, riser straps up to each equipment's earthing pad, and the soil-resistivity / Grid-resistance / touch-and-step voltage measurements) is wholly within Package-I scope, with Package-III (E&M) responsible only for the final protective earthing connection from each piece of equipment to the Package-I-supplied riser strap. If either (a) or (b) is, in whole or in part, within Package-III scope, please specify which sub-items and identify the governing civil specification sections and design criteria to be followed.	

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		protective earthing connection, implying the buried main ground grid, riser conductors, ground rods, earth pits, mesh, and touch/step-voltage measurements are Package-I's. This interpretation needs explicit confirmation given the significant cost and test-acceptance implications.		

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SP-2	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 §1.1.1 Civil Works for 132kV Line End Bays at Remote End 1-2 132kV Line End Bays civil works scope boundary with Package-I 132kV	Spec: The Civil Works shall be executed in accordance with the relevant technical specifications, material standards, workmanship requirements, inspection and testing procedures defined under Package-I...In the event of any discrepancy between the provisions of Package-I and this Package, the provisions of this Package shall prevail. Ambiguity: E&M Contractor must comply with Package-I civil specs 'insofar as they are applicable' but conflict resolution is unclear. Package-I specifications may not fully address remote site conditions (Aliabad grid station). Which contractor is responsible if Package-I specs are non-compliant with actual site conditions? Self-verification: Spec partially addresses this: "In the event of any discrepancy between the provisions of Package-I and this Package, the provisions of this Package shall prevail."	If discrepancies are discovered during design review, who formally approves modifications and who bears cost/schedule impacts?	The scope of Remote End Line Bays including Civil works at 132/66 kV Aliabad Regional Grid Station shall be deleted from Package-III. In this regard, an Addendum No. 01 to RFP/EPC Bidding Document shall be issued on EPADS V2.0 in due course of time.

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SP-3	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 §1.8 Environmental Compliance and §4.2 ESHS Requirements 1-16 to 1-17 and 4-3 Environmental permits and NOC responsibility allocation	Spec: The Contractor shall comply with...the conditions that will be laid down in 'No Objection Certificate (NOC)'...The Contractor shall apply for the operational stage NOC after the completion of the Construction works with GB EPA...The Contractor shall (prepare)...Site-Specific Environmental Management Plan (SSEMP). Ambiguity: Document requires contractors to apply for 'operational stage NOC' but is unclear whether construction phase NOC (if required by GB EPA) is Employer or Contractor responsibility. No timeline is specified for NOC issuance or delays. What happens if GB EPA withholds NOC post- completion? Self-verification: Spec partially addresses this: "The Contractor shall apply for the operational stage NOC after the completion of the Construction works with GB EPA...The Contractor shall	Is construction-phase Environmental Clearance an Employer responsibility? If NOC issuance is delayed, is this force majeure or Contractor liability?	NOC for the construction phase has already been issued from EPD Gilgit-Baltistan.

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		(prepare)...Site-Specific Environmental M..."		
SP-4	Attabad Lake Hyd Specific Provisions, March 2026 1.11 Mobilization and Demobilization; Conditions of Contract reference 1-18 hydropower Project (54 MW) - EPC Package-III Import duties, taxes, and VAT/GST	Spec: Cost of mobilization and demobilization shall be deemed to cover in overall Contract Price, and no separate payment shall be made. Ambiguity: Document does not explicitly state who bears import duties, custom taxes, sales tax (VAT/GST), or other duties on imported E&M equipment. It is unclear whether the lump-sum contract price is on a CIF Islamabad/CFR Gilgit-Baltistan basis, or if Contractor must pay all duties.	Will the contract specify whether equipment pricing is CIF Islamabad, CFR site, or DDP (Contractor pays all duties)? Are import taxes, customs duties, and VAT the Contractor's liability or are they reimbursable by the Employer?	For Equipment Pricing, refer ITP 15.8, "Schedules of Payment for E&M Works (Schedule 1 to 6)" of Proposal forms, Section-IV, Volume-I of RFP/EPC Bidding Document and please refer Sub-Clause 14.4 (Schedule of Payments) of Particular Conditions of Contract Part B, Special Provisions, Section-VIII, Volume-I of RFP/EPC Bidding Document with any Addenda issued thereto For taxes (Local Direct and Indirect Taxes), please refer Sub-Clause 14.1(b) (The Contract Price) of Particular Conditions of Contract Part B Special Provisions, Section-

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				VIII, Volume-I of RFP/EPC Bidding Document.
SP-5	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 §1.13 Contractor Submittals; Conditions of Contract (General) 1-20 Currency split and exchange rate fluctuation risk	Spec: Price and Payment schedule (to be submitted with proposal) Ambiguity: The RFP/Conditions of Contract are not provided in this Specific Provisions document. No clarity on whether contract is in USD, PKR, or a split; nor on exchange rate mechanism, hedging provisions, or who bears currency loss if PKR devalues during project duration.	What is the currency composition of the contract price (USD/PKR)? If split, what is the mechanism for exchange rate adjustment if the PKR/USD rate changes significantly during mobilization and construction?	For Currency composition of Contract Price, please refer Sub-Clause 14.15 (Currencies for Payment of Contract Price) of Particular Conditions Part A, Contract Data, Section-VIII, Volume-I of RFP/EPC Bidding Document. For Mechanism of Exchange Rate Adjustment, please refer to Sub-Clause 14.4 (Schedule of Payments) of the Particular Conditions, Part B, Special Provisions, Section-VIII, Volume-I of RFP/EPC Bidding Document together with any addenda issued thereto.

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SP-6	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.11 Mobilization; Conditions of Contract (not provided in Specific Provisions)1-18 Advance payment percentage and security requirements	Spec: N/A - Conditions of Contract document not included Ambiguity: The Specific Provisions document does not detail advance payment percentages, conditions for release, or whether the Contractor must post a bank guarantee to secure advance payments. Standard practice is 10-15% mobilization advance, but no rate is stated here.	What percentage advance payment will be allowed, and under what conditions (e.g., presentation of bank guarantee covering 100-150% of advance)? Is the advance refundable from monthly progress payments?	For Amount and Further Details related to Advance Payment, please refer Sub-Clause 14.2 “Advance Payment” of Conditions of Contract. (Section VII General Conditions and Section VIII Particular Conditions (Part A, Contract Data and Part B Special Provisions) , Volume-I of RFP/EPC Bidding Document) with any addenda issued thereto.
SP-7	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 §1.11, §1.13 Contractor Submittals; Conditions of Contract 1-18, 1-20 Retention and milestone payment schedule clarity	Spec: Price and Payment schedule (to be submitted)...Cost of mobilization and demobilization shall be deemed to cover in overall Contract Price Ambiguity: Retention percentage, release conditions, and the treatment of defects liability period are not specified in the Specific Provisions. Standard EPC contracts retain 5-10% until completion	What is the retention percentage from monthly invoices, and when is it fully released (e.g., at Taking-Over Certificate issuance, or after DNP completion)? Is there interest earned on retention?	•Percentage of Retention Money from each Invoice/Milestone has been mentioned at Sr. No. 31 Sub-Clause 14.3(iii), Part-A Contract Data, Section VIII, Particular Conditions, Volume-I of RFP/EPC Bidding Document For Release of Retention Money Refer to Sub-Clause

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		certificate, but the document is silent. When is retention released post-defect notification period (DNP)?		14.9 of Section VII General Conditions, Volume-I, RFP/EPC Bidding Document (FIDIC Silver Book 2017 Second Edition Reprinted 2022) and Sub-Clause 14.4 Schedule of Progress Payments Part-B Special Provisions, Section VIII, Particular Conditions, Volume-I of RFP/EPC Bidding Document.
SP-8	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.15.6 Tests on Completion (Schedule section not provided in detail); Conditions of Contract 1-38 onwards	Spec: Time for Completion given in Contract could be achieved...The integrated Project schedule shall provide schedule dates for all Milestone Dates Ambiguity: The Specific Provisions document references 'Conditions of Contract' for liquidated damages but does not state the amount per day of delay, cap on total LD (if any), or whether LDs apply to intermediate milestones or only final	What are the liquidated damages rates for schedule delay (e.g., per day per MW output)? Is there a cap on total LD exposure? Are there separate LDs for efficiency shortfall or generation shortfall vs. availability shortfall?	Please refer to Table-1: Time Schedule for Delay Damages for Delayed Completion of Units and Sub-Clause 7.10: Performance Guarantees under Part-B Special Provisions, Section VIII Particular Conditions Volume-I RFP/EPC Bidding Document, for the applicable

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	Liquidated damages for schedule delay and performance shortfall	completion. No LD for efficiency/performance shortfall is mentioned.		provisions on delay damages related to unit completion.
SP-9	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.15.3 Testing and Verification of Performance and Guarantees; §1.13.23.1 Factory Acceptance Tests 1-34, 1-38 Performance guarantees for turbine efficiency and generator output	Spec: If the efficiency of the turbine during turbine model test is lower than required efficiency the Employer have right to reject the test...Efficiency/performance tests shall be conducted on at least one turbine...(720-hour reliability run). Ambiguity: The document specifies model test efficiency requirement and 720-hour reliability run but does not quantify the guaranteed turbine efficiency (%) or generator output (MW). No detail on what happens if efficiency shortfall is detected during 720-hour test or commissioning test - is it a defect or a performance guarantee breach? Self-verification: Spec partially addresses this: "If the efficiency of the turbine during turbine model test is lower than required efficiency the Employer	What is the guaranteed minimum turbine efficiency (%) and generator output (MW) at rated head? If shortfall occurs, must Contractor replace turbine at no cost?	The requirements of Sub-Clause 7.10 "Performance Guarantees of Volume-I of RFP/EPC Bidding Document shall prevail.

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		have right to reject the test...Efficiency/performance tests shall be cond..."		
SP-10	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.10 Joint Operation and Defect Notification Period; §1.15.2 Tests on Site 1-17, 1-38 Warranty and defect liability period trigger and duration	Spec: The E&M Works Contractor shall successfully complete the joint operation...for a period of Two (02) years, which shall run concurrently with the Defect Notification Period (DNP)...The Contractor shall remain fully responsible for rectifying defects within its scope during the Defect Notification Period at no additional cost to the Employer. Ambiguity: The 2-year DNP is stated to run 'from Commercial Operation Date' but it is unclear whether defects found during the 720-hour reliability run (which may occur before formal CoD if CoD is defined as first synchronized generation) extend the DNP, and whether component-specific warranties (e.g., 5- year turbine warranty) supersede the 2-year DNP. Self-verification: Spec partially	Does 2-year DNP commence from first Taking-Over Certificate or when all units are operational? Do defects found in 720-hour tests extend DNP?	Refer to Sub-Clause 1.15.2 Tests at Site, Part-I, Specific Provisions, Volume-II of RFP/EPC Bidding Document for Commencement / Start of DNP For extension of DNP, refer to Sub-Clause 11.3 (Extension of Defect Notification Period) of Section-VII General Conditions, Volume-I, RFP/EPC Bidding Document (FIDIC Silver Book 2017 Second Edition Reprinted 2022). Warranty of equipment, if provided more than DNP by the manufacturer, then warranty of manufacturer will prevail.

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		addresses this: "The E&M Works Contractor shall successfully complete the joint operation...for a period of Two (02) years, which shall run concurrently with the Defect Notification Period (DNP).		
SP-11	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.6 Provision of Field Camps and Offices; 1.11 Mobilization 1-8 to 1-9, 1-18 Employer-furnished items and site facilities scope	Spec: The Contractor shall establish site office on temporary land at his own cost...Overall development of the Contractor Camp for their own staff is the responsibility of the Contractor...Contractor shall maintain and operate suitable capacity diesel generators...Contractor shall be responsible for the supply of adequate potable water. Ambiguity: While the document states Contractor is responsible for camps, water, and power, it is unclear what the Employer will provide. Will WAPDA provide main access road (assumed existing from civil works?), security (military or civilian?), or basic site utilities	Will WAPDA provide: (a) main access road maintenance and winter snow clearance; (b) grid power connection point and capacity available to contractor camps; (c) water supply from civil works; (d) security perimeter/checkpoints? If Contractor must build all from scratch, what is the estimated cost impact?	Refer to Section 1.6 (Provision of Field Camps and Offices and Operating Facilities) of Part-I, Specific Provisions, Volume-II of RFP/EPC Bidding Document wherein duties / responsibilities of EPC Contractor have been clearly described. Cost of these facilities shall be borne by EPC Contractor in accordance with Sub-Clause 1.11 (d) (Mobilization Demobilization) of Part-I, Special Provisions, Volume-II of RFP/EPC Bidding Document.

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		(grid power availability, water mains from Package-I)? No Employer-furnished items list is included.		
SP-12	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.6.3 Security; 1.6.2 Workforce composition (not explicitly detailed) 1-9 Site security and military clearance for foreign personnel	Spec: The Contractor shall provide an adequate number of trained and licensed security guards for site security...Security inside the perimeter of the Contractor camp shall be the responsibility of the Contractor. Ambiguity: The document requires Contractor to provide site security but does not clarify whether Contractor is responsible for obtaining military clearance, ISI/IB vetting, or travel permits for foreign nationals. Gilgit-Baltistan is a sensitive area with military administration. No clarity on foreign expat quota, visa processing timeline, or liability if visa is denied.	Who obtains military clearance and ISI/IB security vetting for foreign contractor personnel? How many foreign expats are allowed on-site? What is the timeline for visa processing, and if visas are denied, is this treated as force majeure or Contractor liability?	Refer to Sub-Clause 4.21 (Security of Site) of Part B Special Provisions, Section VIII, Particular Conditions, Volume-I of RFP/EPC Bidding Document, security of Foreign Experts shall be responsibility of EPC Contractor.
SP-13	Attabad Lake Hydropower Project (54	Spec: Number of female workers, percentage of workforce...Gender issues	Is there a mandatory minimum percentage of local GB workforce? Are	There is no mandatory minimum percentage or fixed quota prescribed in the

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	MW) - EPC Package-III Specific Provisions, March 2026 4.2 ESHS Requirements; Table 4-1 Contractor's Staff for ESHS 4-3 to 4 Local content and minimum Pakistani workforce percentage	raised and dealt with...Carry out the consultations with local community. Ambiguity: The document requires employment of local community staff and gender-balanced hiring but does not specify a mandatory local content percentage (e.g., minimum 30% Pakistani workforce, minimum 5% local GB residents). No penalty is stated for non-compliance with local hiring targets	there targets for hiring from specific districts (Hunza, Nagar)? If targets are missed, what are the consequences (LDs, rejection of workers)?	RFP/EPC Bidding Document for the engagement of local Gilgit-Baltistan (GB) workforce, nor are there district-specific hiring targets for Hunza, Nagar, or any other district. However, the EPC Contractor shall make all reasonable efforts to utilize the available local workforce from the project area, subject to their suitability, qualifications, and availability for the required trades and skills. Engagement of local labor shall be carried out in accordance with applicable laws, labor regulations, and the EPC Contractor's approved staffing plan
SP-14	Attabad Lake Hydropower Project (54 MW) - EPC Package-III	Spec: Environmental Expert (01), Health and Safety Expert (01), Social Expert (01)...duration: Whole Construction	What are the minimum qualifications for each ESHS expert role (degree, certification, field	For the minimum Qualification and Experience of the ESHS Experts, please refer to Section 1.3 of

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	Specific Provisions, March 2026 4.2.3 Organization and Responsibility; Table 4-1 4-3 to 4-4 HSE staffing levels and qualifications HSE	Phase...The proposed Contractor staff will be selected in collaboration with the Employer after the prior approval. Ambiguity: Table 4-1 specifies one Environmental Expert, one Health & Safety Expert, and one Social Expert but does not define qualifications (BSc/MSc requirement, certifications, years of experience). No detail on whether these roles are full- time on-site or can be shared across multiple projects. Cost impact of these roles is unclear.	experience)? Are these roles budgeted for the entire construction phase + 2-year DNP, and are costs for these staff included in the Contract Price?	Volume-I of RFP/EPC Bidding document (Page No. 3-23). Yes, these roles have been budgeted for the entire construction period + 2-year Defects Notification Period (for DNP, intermittent input only may be considered by the Proposer), and costs for these staff have been included in the Contract Price.
SP-16	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.7 Quality Assurance/Quality Control; §1.13.21 Inspection and Test Plan	Spec: The Contractor shall prepare and submit Method Statement for the review and approval of Employer prior to the execution of any permanent works...The Contractor shall specify applicable points for the approval of Employer for each item of work. Ambiguity: The document requires QA/QC plan approval and specification of	What is the Employer's target turnaround for approving QA/QC plans? If Employer approval is delayed, does the Contractor get schedule extension?	For Employer's target turnaround for approving QA/QC plans refer to Sub-Clause 5.2.2: Review by Employer of Part-B, Special Provisions, Section VIII, Particular Conditions, Volume-I of RFP/EPC Bidding Document.

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	1-13 to 1-15, 1-24 Quality Assurance/QC plan approval and hold points	hold points but does not define turnaround time for Employer approval. If approval is delayed, does the Contractor have schedule relief? No detail on what constitutes a valid 'hold point' (witness point, hold point, source inspection, etc.) and who decides. Self-verification: Spec partially addresses this: "Within thirty (30) days of the date of the Letter of Acceptance, the Contractor shall produce and submit to the Employer an outline of the Plan. Within a further 30 days of the abo..."		For Extension of Time refer to Sub-Clause 8.5: Extension of Time for Completion Part-B, Special Provisions,, Section VIII, Particular Conditions, Volume-I of RFP/EPC Bidding Document.
SP-17	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026§1.7 Quality Assurance; 1.11.13.2 NCR definition 1-15, 1-29 Non-Conformance Report (NCR) resolution and closeout	Spec: No NCR shall remain open at the time of Taking-Over unless expressly approved by the Employer...NC-1: Minor defects which will be repaired immediately, then recorded...NC-4: Major defects on critical items affecting safety, performance, or reliability. Ambiguity: The document categorizes NCRs (NC-1 to NC-4) but does not specify the Employer's approval timeline for NCR	If Employer does not approve NCR closeout, what is the dispute resolution process? Who bears cost of extended rework?	For Resolution of Disputes Refer to Sub-Clause 21.6 Arbitration, Part-B, Special Provisions, Section VIII, Particular Conditions, Volume-I of RFP/EPC Bidding Document. The EPC Contractor shall be responsible for additional cost to correct Non-

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		closeout, nor consequences if Employer delays approval. It is unclear whether Contractor can proceed with Taking-Over if an NCR is 'expressly approved' to remain open, and whether this is treated as a Defect during DNP. Self-verification: Spec partially addresses this: "Procedure for the issuance, tracking and closeout of Non-Conforming Reports (NCR's) and Deviation Reports (DR's) shall be defined. This procedure shall prioritize the NCR's and ens..."		Conformance Report under Sub-Clause 4.1 (Contractor's General Obligations), Sub-Clause 5.1 (General Design Obligations), Sub-Clause 11.1 (Completion of Outstanding Work and Remedying Defects) and Sub-Clause 11.2 (Cost of Remedying Defects) of Section VII General Conditions , Volume-I, RFP/EPC Bidding Document (FIDIC Silver Book 2017 Second Edition Reprinted 2022).
SP-18	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026	Spec: During design review and prior to start of manufacturing, WAPDA/NGC review/approval shall be required...The Contractor is bound to facilitate the Employer during review/approval process by NGC and will provide all the required	What is the expected timeline for NGC approval? If NGC approval is delayed beyond Contractor's control, is this force majeure?	The approval from NGC shall not be required due to non-connectivity of ALHPP power generation with NPCC. The approval from Employer and its authorized representatives shall be

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	1.14.4 WAPDA/NGC Approvals 1-37 WAPDA/NGC approval timeline for switchyard equipment WAPDA/NGC	information...Any delay arising from non-compliance or incomplete submissions shall be at the Contractor's risk and cost. Ambiguity: WAPDA/NGC approval is a critical path item but no timeline is specified. Typical approvals take 4-8 weeks. If NGC approval is delayed due to incomplete information from Contractor, the Contractor bears cost/schedule impact. But if NGC administratively delays, is this force majeure or Employer's problem? Self-verification: Spec partially addresses this: "The Contractor is bound to facilitate the Employer during review/approval process by NGC and will provide all the required information, technical data/test reports as per WAPDA/NGC..."		mandatory. The same will be updated in upcoming Addendum No. 01 to RFP/EPC Bidding Document.
SP-19	Attabad Lake Hydropower Project (54 MW) - EPC Package Specific Provisions,	Spec: The Contractor shall at its own expense carry out all such tests...No additional payment shall be made for testing and commissioning activities.	If during FAT a defect is discovered requiring rework and re-test (adding >10 days), who	1. The stated approximately forty (40) FAT/Inspection visits are indicative only. The actual number of

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	March 2026 1.13.23.3 FAT; §1.15.3 Testing and Verification of Performance 1-34, 1- 39 Testing and commissioning	Ambiguity: Document states 'No additional payment' for testing but the 800 man-day FAT cost estimate and site commissioning costs (personnel, equipment, energy) are 'included in the price' with no itemization. If actual FAT cost exceeds estimate due to retest loops, is this Contractor's loss? No cost cap is stated.	bears the additional cost? Is there a single allowance for FAT visits (fixed at 40 × 10 days), or is each additional day billable?	FAT/Inspection visits may vary depending on manufacturing schedule and equipment readiness. No separate payment shall be made to EPC Contractor for any increase in number of FAT/Inspection visits. 2. Each FAT/Inspection visit shall be for up to ten (10) days including travel days. Actual duration may be shorter or longer depending on test scope. The EPC Contractor shall accommodate reasonable variations without additional cost to the Employer. 3. If any test is required to be repeated due to EPC Contractor's failure or Non-Compliance,

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				all additional costs shall be borne by the EPC Contractor.
SP-21	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.10 Joint Operation and Defect Notification Period; §1.13.23.1 O&M Training 1-17, 1-33 Post-commissioning O&M support and staff duration	Spec: Upon successful testing and commissioning, the Contractor shall assist in the joint operation of facilities for training the Employer's staff...The Contractor shall deploy qualified and experienced personnel for the operation, maintenance, and rectification of any defects...during this period. Ambiguity: The 2-year DNP requires Contractor 'presence' for operation and defect fixing but does not specify staffing levels, required qualifications, or how long per day/month. Are Contractor staff on-site 24/7, or only during defined shift hours? What is the cost of operating the plant 24/7 for 2 years? Self-verification: Spec partially addresses this: "The Contractor shall deploy qualified and experienced personnel for the operation, maintenance,	What is the minimum Contractor staffing required during 2-year DNP? Minimum numbers for operators, engineers, technicians?	It will be proposed by the Proposer as per requirements specified in RFP/EPC Bidding Document.

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		and rectification of any defects related to Electro- Mechanical works during this per..."		
SP-22	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.10 JOINT OPERATION AND DEFECT NOTIFICATION PERIOD; §1.8 Environmental Compliance 1-17, 1-16 Defect correction during DNP and scope limits	Spec: The Contractor shall remain fully responsible for rectifying defects within its scope during the Defect Notification Period at no additional cost to the Employer...Any defect requiring joint coordination between Civil and E&M Contractors shall be addressed through Employer, ensuring timely resolution. Ambiguity: What constitutes a 'defect' within E&M Contractor's scope vs. a civil works defect (e.g., powerhouse structural cracks, penstock liner damage)? If civil defects affect E&M equipment (e.g., penstock leak damages generator cooling), who is liable, and what is the mechanism for cost recovery or schedule adjustment? Self-verification: Spec partially addresses this: "The Contractor shall remain fully responsible for rectifying	If structural defect in penstock (Package-I) causes E&M damage during DNP, who is responsible? Clear scope delineation between packages?	The EPC Contractor shall remain responsible for rectifying defects within its own scope at no additional cost to the Employer. Where defects originate from Civil works and have consequential impact on Electro-Mechanical Works equipment, such matters shall be addressed under the responsibilities of the Civil & Auxiliary Services Works EPC Contractor, with coordination facilitated through the Employer to ensure timely resolution.

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		defects within its scope during the Defect Notification Period at no additional cost to the Employer."		
SP-23	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.2.1.5 132kV AIS Switchyard (item j: SCADA); General Design Criteria 1-4, 1-36 Intellectual property and source code escrow for SCADA/protection systems	Spec: SCADA and Telecommunication System. Equipment to be of standard design...The design of the Project will be submitted by the Contractor to the Employer for review and approval by the Employer without relieving the Contractor of full responsibility for the design. Ambiguity: The document requires SCADA and Protection system design submission but does not address IP ownership, source code escrow, or access rights post-contract. If the OEM refuses to provide source code, can the Contractor be held liable for unavailability, or is this the Employer's problem?	Will the Contractor be required to provide source code and documentation for SCADA/Protection system software in escrow? If the OEM restricts source code access, what is the Contractor's obligation to the Employer for O&M continuity post-DNP?	The EPC Contractor shall not be required to deposit or provide the source code of the SCADA system software in ESCROW, unless otherwise expressly stated in the Contract. The EPC Contractor shall ensure that the SCADA system (Hardware / Software) shall be delivered with open architecture, enabling the Employer (or any third party engaged by the Employer) to perform routine O&M and Troubleshooting etc. The EPC Contractor shall ensure that no proprietary restrictions (including licensing limitations) hinder the Employer's long-term use of the SCADA system.

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SP-24	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.3 Detailed Design and Planning; Conditions of Contract (not provided) 1-5 Change orders and variation approval process	Spec: Any deviations from the requirements stated in Volume- II, Part-I, Part-II and Part-III shall be brought to the attention of the Employer in writing and shall be subjected to Employer's approval. Ambiguity: The document requires Employer approval of design deviations but does not detail the change order process, unit rates for extra work, or timelines for approval. If Employer requests a change (e.g., additional transformer bay), is there a predetermined unit rate schedule, or is cost negotiated ad hoc?	Will the Contractor be required to submit a 'Schedule of Rates' for extra work items (e.g., additional transformer bay, extra cable tray)? If Employer-requested changes occur during construction, what is the approval and billing mechanism?	Any deviations from the requirements stated in Volume- II, Part-I, Part-II and Part-III will be dealt in accordance with Clause 13 (Variation and Adjustment) of Section VII General Conditions, Volume-I, RFP/EPC Bidding Document (FIDIC Silver Book 2017 Second Edition Reprinted 2022).
SP-25	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 Conditions of Contract (not provided in Specific	Spec: N/A - Conditions of Contract document not included in Specific Provisions Ambiguity: The Specific Provisions document does not include Conditions of Contract with dispute resolution clauses. Standard EPC contracts specify arbitration	Will disputes be resolved through international arbitration (ICC, LCIA) or local Pakistan arbitration? If international arbitration, what is the language, venue (Switzerland,	Refer Sub-Clause 21.6 Part A, Contract Data, Section VIII, Particular Conditions, Volume-I of RFP/EPC Bidding Document

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	Provisions) N/A Dispute resolution mechanism and governing law	(ICC, LCIA, or local Pakistan rules). For a Pakistani project, arbitration venue (Islamabad, Lahore) and governing law (Pakistani vs. international) are critical but unspecified.	Pakistan), and seat of arbitration?	
SP-26	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 Conditions of Contract (not provided); General Provisions N/A Force majeure definition and delay compensation	Spec: N/A - Force majeure not detailed in Specific Provisions Ambiguity: The Specific Provisions do not define force majeure. Standard clauses might include war, pandemic, sanctions, geological events. For Gilgit-Baltistan, relevant FM events are: winter closure of roads (Oct-May), avalanches, seismic events, political instability, import sanctions. Unclear if these are FM or normal site conditions the Contractor should account for.	Will winter road closure (Oct-May) be treated as force majeure entitling the Contractor to schedule extension with no LD, or is this a known site condition the Contractor must plan around?	The Proposers are deemed to have informed themselves of all local conditions, including accessibility constraints, climatic conditions, and seasonal restrictions, prior to submission of their Proposals (Sub-Clause 4.10 (Use of Site data) and Sub-Clause 4.12 (Unforeseeable Difficulties) of GCC), in accordance with the Instructions to Proposers and Conditions of Contract. Force Majeure events shall be administered in accordance with Clause 18

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				(Exceptional Events) of the Conditions of Contract.
SP-27	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.11 Mobilization and Demobilization; §1.13 Contractor Submittals 1-18, 1-20 Mobilization cost and advance payment linkage	Spec: Cost of mobilization and demobilization shall be deemed to cover in overall Contract Price, and no separate payment shall be made...Price and Payment schedule (to be submitted with proposal) Ambiguity: Mobilization costs are 'deemed to cover' the lump sum but the Contractor must submit a detailed Payment Schedule with proposal. If mobilization cost is 10% of contract value but only 5% advance is provided, the Contractor must self-finance the gap. No clarity on advance payment percentage or drawdown schedule.	If mobilization cost is estimated at 12% of contract value, what advance payment (%) will be available before site mobilization begins? Is there a milestone-based draw schedule (e.g., 10% on NTP, 5% on camp completion)?	Refer to 14.2 (Advance Payment) Part A and Part B of Section-VIII Particular Conditions, Volume-I, RFP/EPC Bidding Document
SP-28	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions,	Spec: Two (2) sets of Trash rack...One (1) set of Stoplogs...Two (02) Fixed Wheel Gates...Three (03) Bulkhead Gates (Fixed Wheel Type)	What are the specific interface points between E&M (Package-III) and hydro-mechanical (Package-II) works? Clear	Package-I scope of works comprises on the following systems: -Civil works of Project -Penstock

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	March 2026 1.2.1.2 Power Intake; 1.2.1.4 Draft Tube 1-3 to 1 -Interface with Package-II Hydro- Mechanical works	Ambiguity: The Specific Provisions list trash racks, stoplogs, gates, and gantry cranes as E&M Contractor scope, but it is unclear if Package-II (Hydromechanical Works) is a separate contract or part of E&M. The interface between civil penstock structure and E&M gate/valve installation is not clearly delineated. Self-verification: Spec partially addresses this: "The Contractor shall coordinate with the Civil Works Contractor to ensure seamless integration and operation of systems requiring both civil and E&M inputs. Any defect requiring jo..."	responsibility matrix for interface defects?	-Auxiliary systems (HVAC, Lighting and small power, firefighting and fire detection and alarm system, Sewage system, Elevators, Potable water system, Grounding system, Distribution system for colony etc) Package-II Scope of works comprises on the following systems: -132 kV Transmission Line including Remote bays at Sost and Aliabad Regional Grid. Package-III Electro-Mechanical works comprises on the following systems: All hydro mechanical equipment (Turbine, Generator, Governor, Unit Auxiliaries, MIV, Generator step up transformer, Auxiliary T/F, and other

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				associated systems) and hydraulic steel structures mentioned in Volume-II. Package-IV comprises on the following systems: Civil Works for Overflow Weir and Landslide Slope Treatment. Also, note that weir is ungated, no E&M equipment shall be installed.
SP-30	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.14.4 WAPDA/NGC Approvals; 2.3 General Electrical Requirements 1-37, 2-48 Metering and tariff metering point definition	Spec: Tariff Metering Equipment...shall be in accordance with prevailing WAPDA/NGC standards...Cost of such tests shall be included in the cost of relevant equipment. Ambiguity: The document requires tariff metering equipment compliance with WAPDA/NGC standards but does not specify the metering point location (primary of generator step-up transformer, HV side of generator step-up transformer, or 132 kV switchyard HV side). Metering	Where will the official generation metering point be located (primary/secondary of step-up transformer, or 132 kV line)? Who will own and maintain the metering equipment post-commissioning?	Tariff metering shall be installed at the 132 kV side (grid interface) of the generator step-up transformer within the 132 kV switchyard. Please refer to Section 6.3.14 of Technical Provisions, Part-II, Volume-II of RFP/EPC Bidding Document of Package-III. Also refer to Conceptual Drawing No. ALHPP-SY-0601, attached in Employers

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		point affects revenue calculation and must be jointly agreed.		Requirement., Volume-II, Part-III.
SP-31	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.6.2 Workforce; 4.2.4 ESHS Reporting 1-8 to 1-9, 4-5 Subsistence allowance rates and work hour regulations	Spec: @ 200 US\$/day for one person for foreign inspections and @ 15,000 PKR/day for one person for local inspections...Number of workers, work hours, metric of Personal Protection Equipment (PPE) use. Ambiguity: Daily allowance rates are specified for FAT inspections but the document does not detail normal worker subsistence allowances, overtime rates, or whether Contractor-provided accommodation affects DA. Pakistani labor law restricts work hours to 8 hours/day, but no reference to local labor laws is made.	What are the daily subsistence allowance rates for contractor employees (foreign and local)? Must the Contractor comply with Pakistani labor law work-hour restrictions (8 hrs/day, 40 hrs/week)?	Subsistence Allowance rates for Contractor Employees shall be as per Contractor's Firm Rules. Refer to Sub-Clause 1.1.43 (Laws) of Part B Special Provisions of Section VIII Particular Conditions, Volume-I of RFP/EPC Bidding Document for applicable laws.
SP-32	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions,	Spec: Operation and Maintenance Manuals...which must be in English language...The official language for all type of trainings must be English...All	Should critical O&M and safety procedure documents be translated to Urdu for non-English speaking site staff to	All Operation and Maintenance Manuals, Training Materials, and related submittals shall be prepared and submitted in

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	March 2026 1.13 Contractor Submittals; 1.13.23.5 O&M Manuals1-20, 1-35 Document submission language and reproduction	manuals shall also be provided in electronic version (Microsoft Word and pdf formats). Ambiguity: Documents must be in English and provided in both hard copy and soft copy, but the number of hard copies is not consistently stated. For example, O&M manuals require 'Ten (10) hard copies' but other submittals just say 'sufficient copies.' Also unclear: are drawings required in Urdu for local O&M staff benefit? Self-verification: Spec partially addresses this: "Table 1-1 specifies copy numbers: 4 for review, 6 for final issue, 10 for O&M Manuals;	ensure safety compliance?	English, both in hard copy and electronic formats as well, as specified in the RFP/EPC Bidding Document. The number of copies shall follow Table 1-1 requirement (e.g., (04) copies for review, six (06) copies for final issue, Ten (10) copies for O&M Manuals). No translation of these documents into other languages will be required; English shall remain the official language for documentation and training.
SP-34	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 4.2.3 Organization and	Spec: For disposal of Construction and Demolition (C&D) waste, it is the responsibility of Contractor to engage licensed district level waste Contractor for disposal of C&D waste after consultation with Local Authority.	Are C&D waste disposal costs included in the lump-sum contract price, or are they to be reimbursed separately by the Employer? Does this	C&D waste disposal cost including the hazardous waste must be included in the overall cost presented by the EPC Contractor.

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	Responsibility (Note on C&D waste) 4-4 Environmental waste management responsibility and cost	Ambiguity: Contractor must hire a licensed waste contractor to dispose of C&D waste but cost is not explicitly stated as reimbursable or already included in the lump-sum price. In Pakistan, C&D waste disposal can be costly (especially for hazardous materials). No detail on whether chemical waste (used oils, solvents) falls under 'C&D' or is a separate environmental cost.	include hazardous waste (oils, solvents, batteries)?	
SP-35	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.15.6 Tests on Completion; Conditions of Contract 1-41 Taking-Over Certificate issuance criteria and partial TO	Spec: Tests on Completion are tests to progressively prove the correct operation...Tests on Completion shall be carried out for each Section of the Project prior to issuance of the relevant Taking-Over Certificate. Ambiguity: The document mentions taking over 'for each Section' suggesting partial Taking-Over is allowed (e.g., Unit 1 taken over while Units 2 & 3 are still being commissioned). But criteria for 'acceptable performance' to issue a TO	What constitutes a "minor defect" that does not prevent issuance of Taking-Over Certificate? Will partial TO certs be issued when each unit completes 720-hour tests, or only when all units are synchronized?	The EPC Contractor shall be fully responsible for the Testing and Operation of all Project equipment, systems, and facilities until the issuance of the associated Taking-Over Certificate.

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		cert are not defined. Can the Employer partially accept a unit with minor defects recorded as 'expressly approved'? Self-verification: Spec partially addresses this: "Tests on Completion shall be carried out for each Section of the Project prior to issuance of the relevant Taking-Over Certificate."		
SP-36	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.10 Joint Operation and Defect Notification Period 1-17 Commercial Operation Date definition and payment trigger	Spec: Joint operation of Electro-Mechanical works for a period of Two (02) years, which shall run concurrently with the Defect Notification Period (DNP)...(from Commercial Operation Date). Ambiguity: CoD is mentioned but not defined. Is CoD: (a) first unit synchronized and delivering power to grid, (b) all three units synchronized, or (c) formal Taking-Over Certificate signature? The definition is critical because it triggers retention release schedule and DNP commencement. Without clear definition,	What is the exact definition of Commercial Operation Date (CoD)? Is it the first unit's synchronization with the grid, or the commissioning of all three units? Does final retention payment depend on CoD or on formal Taking-Over Certificate?	The EPC Contractor shall be fully responsible for the Testing and Operation of all Project equipment, systems, and facilities until the issuance of the associated Taking-Over Certificate.

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		billing disputes are likely.		
SP-37	Attabad Lake Hydropower Project (54 MW) - EPC Package-III Specific Provisions, March 2026 1.14 General Design Criteria; §3.1 General (Section 3 Basic Design Criteria)1-36, 1-37 Design standards selection and approval process	Spec: The plant and equipment shall be designed according to the latest version of international standards relevant...If other standards shall be chosen, the Contractor shall supply copies of those standards in English language only...The approval for adoption of such standards must be necessary from the Employer. Ambiguity: The document recommends international standards (ASME, IEEE, IEC, ISO) but allows alternative standards if approved by Employer. Process and timeline for Employer approval of non-standard alternatives are not specified. If Contractor proposes GB/T (Chinese) standards, how long will approval take, and what if Employer objects?	If the Contractor proposes using Chinese (GB/T) standards for steel or valves instead of ASME/ISO, what is the approval turnaround, and will WAPDA accept equivalent standards, or only internationally-recognized ones?	As per RFP/EPC Bidding Document, only International Standards shall be adopted for this Project

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FRR-1	2026-03-11 PKG III VOLIII PART II (FRR) (5-21 to 5-24) Geotechnical – Weir foundation treatment unclear and risky	Spec: Weir foundation proposed on slided mass after treatment; 14m deep slided mass replacement with stabilized clay; cutoff walls by cement slurry or plastic piles (option not finalized). Ambiguity: FRR identifies multiple unresolved geotechnical issues at weir: (1) slided mass (ABGM) with large boulders and cavities to 90m depth is loose and highly pervious; (2) excavation in boulders is impractical and may trigger further sliding; (3) proposed clay blanket on pervious material is hazardous with risk of erosion/piping; (4) cutoff wall option (cement slurry vs plastic piles) not finalized; (5) structural stability not evaluated for bearing, sliding, overturning scenarios. FRR notes excavation volume could increase 'out of-proportion' and equipment handling is 'not feasible'.	FRR §5.5.2 identifies unresolved weir foundation issues including risks of excavation-triggered landslides, impracticality of clay blanket placement, and finalization of cutoff wall method. Will the Employer confirm the preferred foundation treatment approach before EPC bidding, or will contractor bear the cost/risk of modifying the design if geotechnical conditions worsen during construction?	It has been clarified that Civil Works related to the Overflow Weir and Landslide Slope Treatment do not fall under the scope of Package-III: Electro-Mechanical Works. The detailed design for Overflow Weir & Landslide Slope Protection Works have been included in Package-IV, which is being undertaken by AHMC and the detailed design studies is currently in progress.
FRR-2	2026-03-11 PKG III VOLIII PART II (FRR) §5.3.2, §5.4 (Pages 5-16)	Spec: Only 6 boreholes drilled; rock samples from only 1 borehole (BH-04) not truly representing subsurface for whole project area. Additional boreholes	FRR §5.4 recommends additional boreholes (BH-7 to BH-12) and extensive laboratory testing before	It has been clarified that any Additional / Geotechnical investigations specifically required for the installation of

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	to 5-20) 5-17 to 5-20 (Geotechnical Insufficient subsurface investigations recommended before detailed design.)	recommended at weir right bank, intake, surge tank, penstock, and powerhouse locations Ambiguity: FRR critically notes that geotechnical data is inadequate for detail design: (1) limited number of lab tests; (2) rock samples from only one borehole; (3) unexpected test result variations; (4) direct shear test from one sample insufficient; (5) Young's Modulus tests inadequate; (6) additional boreholes (BH-7 to BH-12) recommended at six key locations before finalizing layout. FRR states 'More sampling and testing is required for the better assessment' and identifies missing Lugeon tests, UCS with elastic moduli, and Menard pressuremeter tests.	detail design. Will the Employer fund and complete these investigations before EPC contract signature, or must the EPC Contractor conduct them at its own cost during detail design? What is the timeline?	Electro-Mechanical equipment under Package-III shall be carried out by the EPC Contractor at its own risk and cost, in accordance with Sub-Clause 1.13.18 of the Specific Provision Volume-II, Part- I of RFP/EPC Bidding Document. However, Geotechnical Investigations related to overall Site Stability, Civil Structures, or foundations fall under the scope of the Package-I: Civil & Auxiliary Services Works EPC Contractor and are not part of Package-III: Electro-Mechanical Works.
FRR-3	2026-03-11 PKG III VOL- III PART II (FRR) §6.2, §6.3 (Page 6-1) 6-1 Seismic design parameters unfinalized and require	Spec: SEE = 0.44g for Dam/Weir & 0.38g for Spillway; OBE = 0.24g. No GMPE for Hindukush deep seismic source used. Parameters need update/finalization before or during detail design Ambiguity: FRR identifies critical gaps in seismic analysis: (1) selected SEE and	FRR §6.2-6.3 notes that seismic design parameters (SEE, OBE) are preliminary and require finalization via detailed site-specific seismic hazard assessment, geologic fault	It has been clarified that finalization of seismic design parameters, including site-specific hazard assessment, geologic fault mapping, and geophysical surveys, falls under the scope of the Package-I: Civil and Auxiliary

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		OBE values not compared with PSHA hazard curves and response spectra; (2) no Ground Motion Prediction Equation (GMPE) used for Hindukush deep seismic source zone; (3) detailed site-specific seismic hazard assessment recommended; (4) geologic mapping of faults needed to confirm local faults; (5) geophysical surveys required. Project is Zone-4 seismic with pronounced seismic activity. Uncertainty in design parameters affects all structures.	mapping, and geophysical surveys. Will the Employer provide updated seismic parameters before EPC design, or must EPC Contractor conduct these studies and bear cost/schedule risk?	Services Works EPC Contractor and are not part of Package-III: Electro-Mechanical Works. The Package-I EPC Contractor will carry out these design studies during the engineering stage.
FRR-4	2026-03-11 PKG III VOL-III PART II (FRR) §7.5.1 (Pages 7-10 to 7-12) 7-10 to 7-12 Fault zones in tunnel alignment require clarification before excavation	Spec: Fault zone assumed present at middle section of low pressure tunnel; KKH tunnel drawings show moderately weathered gneiss in parallel section with no fault mentioned. Measures to be taken at fault zone shall be clarified and incorporated in tender design. Ambiguity: FRR notes contradiction regarding fault zone presence in headrace tunnel: (1) fault zone 'assumed' present at middle tunnel section during feasibility	FRR §7.5.1 indicates a fault zone 'assumed' in the headrace tunnel at middle section, but KKH tunnel drawings from parallel section show no fault and only moderately weathered gneiss. Which is correct? Will Employer provide geologic mapping and core data to confirm fault	Volume-III of the RFP/EPC Bidding Document has been provided as supplementary information to guide proposers. The responsibility for updated geological mapping and confirmation of subsurface conditions rests with the Package-I EPC Contractor (Civil and Auxiliary Services Works), to

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		review; (2) KKH tunnel parallel section drawings state 'no fault zone mentioned' but shows moderately weathered gneiss; (3) measures at fault zone location unspecified; (4) this discrepancy creates design uncertainty for tunnel support, excavation method, and grouting requirements.	presence/absence before tender, or does EPC Contractor assume design risk for unknown conditions?	be undertaken during their detailed investigations.
FRR-5	2026-03-11 PKG III VOL-III PART II (FRR) §5.5.2, §7.5.1 (Pages 5-22 to 5-24, 7-10 to 7-15) 5-23; 7-10 to 7-15 Slope stability at surge tank, penstock intake portal, and powerhouse not fully analyzed	Spec: Surge Tank: no borehole drilled at location, subsurface unknown. Power Tunnel end portal: sheared and jointed rock, terrain susceptible to external slope stability failure in seismic zone-4. Intake slopes stability analysis not conducted. Ambiguity: FRR identifies unresolved slope stability concerns: (1) surge tank location has no subsurface investigation, stability unknown; (2) power tunnel outlet portal is in sheared/jointed rock with terrain susceptible to failure, particularly concerning in Zone-4 seismic area; (3) intake area slopes never analyzed for stability; (4) penstock upper reach has	FRR Sub-Section 5.5.2 and Sub-Section 7.5.1 identify multiple slopes with incomplete stability analysis: surge tank (no borehole data), intake area, power tunnel portal (sheared rock in seismic zone), and penstock upper reach. Will Employer fund slope stability studies before tender, or does EPC Contractor design at risk with incomplete geotechnical data?	It has been clarified that slope stability analysis at the Surge Tank, Penstock, Intake Portal, and Powerhouse locations do not fall under the scope of Package-III Electro-Mechanical Works. These investigations and analysis will be undertaken during the engineering stage of Package-I Civil and Auxiliary Services Works, as part of the Level-I and Level-II design responsibilities of the Package-I EPC Contractor.

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		'some slope stability issues'; (5) FRR recommends comprehensive cut slope stability analysis by EPC but does not specify design parameters or acceptable safety factors.		
FRR-6	2026-03-11 PKG III VOL-III PART II (FRR) §4.6, §9.5 (Pages 4-16 to 4-30, 9-3 to 9-5) Design flood determination: 20-year vs 10,000-year; GLOF not finalized	Spec: Design flood return period selected as 20 years in Feasibility; FRR recommends 10,000-year or GLOF whichever is greater; spillway discharge capacity calculations show ~3210 m ³ /sec vs design flood 3250 m ³ /sec (marginal capacity) Ambiguity: FRR notes critical inconsistency: (1) feasibility study selected Q20 flood (1750 m ³ /s for diversion, 3250 m ³ /s for spillway); (2) FRR recommends check flood minimum of 10,000-year return period or GLOF value; (3) GLOF study deferred to detail design stage; (4) spillway uncontrolled discharge ~2400 m ³ /s + gated undersluice 810 m ³ /s = 3210 m ³ /s total capacity vs 3250 m ³ /s design (120 m ³ /s shortfall); (5) FRR notes 2022 flood event should be considered; (6) weir/spillway	FRR §4.11 recommends design flood minimum of 10,000-year return period or GLOF (whichever is greater), but Feasibility Study selected Q20. Also, spillway capacity calculations (~3210 m ³ /s) are marginal vs design flood (3250 m ³ /s). Will Employer confirm which design flood standard applies and provide GLOF estimate before tender, or does EPC assume risk of design modification?	The design flood was adopted as the 10,000-year return period flood, with peak inflow of 3320 cumecs based on the hydrological dataset up to Year 2015. Reservoir routing yielded an outflow of about 3152.8 cumecs, reflecting normal flood attenuation. As noted in the Feasibility Review Report, the EPC Contractor of Package-I: Civil and Auxiliary Services Works will carry out the detailed GLOF assessment and hydrological studies during the detailed design stage. The check flood shall not be less than the 10,000-year return period flood or the GLOF event, whichever is higher, ensuring

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		discharge elevation inconsistencies noted between report sections and drawings.		spillway safety and reliability under climate change considerations.
FRR-7	2026-03-11 PKG III VOL-III PART II (FRR) §4.11, §7.5.2 (Pages 4-30, 7-13 to 7-15) 4-30; 7-13 to 7-15 Sediment load and flushing strategy unresolved; tunnel vs undersluice choice pending	Spec: Annual sediment load 27.08 MTons; FRR proposes new flushing tunnel (5.5m dia, 1100m long, 250 m³/s) instead of original undersluices due to geotechnical issues. Flushing tunnel design, effectiveness, intake level, discharge capacity all 'must be determined with hydraulic model study' Ambiguity: FRR proposes fundamental layout change (replacing undersluices with new flushing tunnel) citing geotechnical problems at weir, but states: (1) flushing tunnel diameter, discharge capacity, effectiveness 'must be determined with hydraulic model'; (2) intake level selection pending; (3) sediment studies to be undertaken during detail design; (4) flushing tunnel outlet in overburden area with risk of damage; (5) tunnel location 7m away from intake raises hydraulic/sediment control concerns; (6) no testing of proposed concept.	FRR §7.5.2 proposes replacing original undersluices with a new flushing tunnel design, but explicitly states tunnel diameter, discharge capacity, and effectiveness 'must be determined with hydraulic model study'. Will Employer fund this model study before tender and confirm flushing strategy, or must EPC Contractor design and test the flushing tunnel concept at its cost, bearing risk of inadequate sediment removal?	It has been clarified that sediment load assessment and sediment flushing strategy, including the proposed sediment flushing tunnel and related hydraulic model studies, fall under the scope of the Package-I; Civil and Auxiliary Services Works EPC Contractor. The Package-I EPC Contractor will carry out the required design development, revalidation, and testing during the engineering stage as part of their Level-I and Level-II design responsibilities. These technical matters are not part of Package-III: Electro-Mechanical Works.

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FRR-8	2026-03-11 PKG III VOL-III PART II (FRR) §8.5, §11.1.5 (Pages 8-37, 4-376 to 4-379) 8-37; 4-376 to 4-379 Turbine efficiency: 91.5% vs 93% - cost and capacity impact	Spec: Feasibility Study assumes 91.5% turbine efficiency (power output 54 MW). FRR mechanical expert endorses 93% turbine efficiency, 'which may result in little higher installed capacity of about 57 MW' Ambiguity: FRR notes divergence in turbine efficiency assumption: (1) feasibility study design uses 91.5% efficiency yielding 54 MW; (2) FRR mechanical expert recommends 93% efficiency achievable for Francis turbines this size; (3) 93% efficiency implies ~57 MW capacity (not 54 MW); (4) impact on turbine cost, generator size, transformer capacity, switchyard equipment, and transmission line design unclear; (5) FRR does not specify which efficiency to use in tender documents.	FRR §8.5 recommends 93% turbine efficiency vs Feasibility Study's 91.5%, potentially increasing capacity to 57 MW. Will Employer confirm which efficiency and turbine capacity specification applies to the tender: 54 MW at 91.5%, or ~57 MW at 93%? How does this affect generator, transformer, and switchyard equipment sizing?	The Turbine Efficiency must comply with the requirements of RFP/EPC Bidding Document. The efficiency of vertical Francis Turbine shall be 93% as mentioned under Sub-Clause 1.16.2.1.5 Key Technical Parameters of Turbines, Volume-II: Employer's Requirements Part-I: Specific Provisions.
FRR-9	2026-03-11 PKG III VOL-III PART II (FRR) §11.1.3 (Pages 4-899 to 4-905)	Spec: Feasibility Study specifies turbine shaft per Indian Standard IS 12837-1989 and IS 12800. FRR recommends replacing with ASTM A668 Class D standard;	FRR §11.1.3 recommends ASTM A668 Class D for turbine shaft instead of Indian Standard (IS 12837, IS 12800). Which standard	As per RFP/EPC Bidding Document only International Standards shall be adopted for this Project. No Indian standard will be allowed

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	4-902 to 4-903 Turbine shaft design standard conflict: Indian Standard vs ASTM	clarifies three (3) Francis units each with separate turbine and generator shaft Ambiguity: FRR identifies standard conflict: (1) feasibility study requires Indian Standard (IS 12837, IS 12800) for turbine shaft; (2) FRR mechanical expert recommends replacing with ASTM A668 Class D; (3) feasibility study also states 'directly coupled to generator rotor' but later clarifies three separate shafts; (4) potential incompatibility between Indian and ASTM standards for fatigue, stress analysis, material certification; (5) no clarity on which standard tender documents require.	will the Tender Specifications require? Also clarify coupling arrangement: are turbine and generator shafts separate or coupled? What are implications for turbine procurement and cost?	
FRR-10	2026-03-11 PKG III VOL-III PART II (FRR) §8.4.1, §8.4.2, §8.4.3, §8.5 (Pages 8-7 to 8-37) 8-7 to 8-37 Number of generating units uncertain: 2, 3, or 4 units	Spec: FRR provides power/energy calculations for 2-unit, 3- unit, and 4-unit options. Feasibility Study selected 3 Francis units (20 MW each) for 54 MW total. FRR validates 3-unit as 'most optimized' but provides alternative scenarios without recommending which to bid Ambiguity: FRR performs energy calculations for multiple unit configurations:	FRR §8.4 presents energy calculations for 2-, 3-, and 4-unit options, endorsing 3-unit (54 MW total) as 'most optimized' but providing alternative scenarios. Will Tender Specifications fix the number of generating units at 3, or may EPC Contractors propose 2- or	Please comply with the specifications and requirements set forth in the RFP/EPC Bidding Document.

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		(1) 2-unit option (27 MW per unit); (2) 3-unit option (18 MW per unit, 54 MW total); (3) 4-unit option (13.5 MW per unit, 54 MW total). FRR endorses 3-unit as 'most optimized' with 79% plant factor, but does not explicitly forbid contractors from proposing 2- or 4-unit alternatives. Unit selection affects turbine cost, generator efficiency, powerhouse size, control complexity, and O&M requirements.	4-unit alternatives with equivalent capacity?	
FRR-11	2026-03-11 PKG III VOL-III PART II (FRR) §9.4.1, §9.4.2 (Pages 9-2 to 9-5) 9-3 to 9-4 Weir/spillway discharge capacity margin inadequate vs design flood	Spec: Uncontrolled ogee spillway capacity ~2400 m ³ /s; 3 gated undersluice gates ~810 m ³ /s total (270 m ³ /s each); total ~3210 m ³ /s vs design flood 3250 m ³ /s. FRR notes 'marginal capacity' and 'very close to design flood discharge' Ambiguity: FRR hydraulic review identifies capacity margin risk: (1) uncontrolled spillway discharge capacity calculated as ~2400 m ³ /s (not the stated 3250 m ³ /s); (2) three undersluice gates total ~810 m ³ /s; (3) combined total ~3210 m ³ /s vs design flood 3250 m ³ /s shortfall of ~40 m ³ /s; (4) FRR notes 'marginal capacity'	FRR §9.4.1 calculates total spillway/under-sluice discharge capacity as ~3210 m ³ /s vs design flood of 3250 m ³ /s, a shortfall of ~40 m ³ /s. FRR notes 'marginal capacity'. Will Employer confirm whether this capacity is adequate, or must spillway be redesigned to accommodate higher flood discharge with safety margin?	The observed difference between inflow (3250 cumecs) and outflow (3210 cumecs) is attributed to flood attenuation within the reservoir (Attabad lake), whereby part of the flood volume is temporarily stored, resulting in a reduction of peak discharge and a corresponding rise in maximum water level. This is a normal and expected hydraulic response of reservoir routing. Furthermore, it has been clearly stated in the Feasibility Review

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		and 'very close'; (5) no safety margin for hydrological uncertainty or potential design flood revision; (6) gate operation reliability critical but unspecified.		Recommendation, that the detail hydrological study would be taken up by EPC Contractor of Package-I: Civil and Auxiliary Services Works during the detailed design stage, that would be based on updated hydrological data, elevation area capacity based on Year 2025 hydrographic survey and revised spillway rating to ensure to pass the selected design and check flood safely over the weir structure.
FRR-12	2026-03-11 PKG III VOL-III PART II (FRR) §7.5.2 (Pages 7-15 to 7-16) Powerhouse location and orientation: original vs proposed (surface vs underground)	Spec: Original: powerhouse on flat terrace near left bank. Proposed: move to higher ground to reduce penstock length and flood risk. Alternative: underground powerhouse 'better during seismic activity in Zone-4' if economics allow Ambiguity: FRR proposes significant layout change for powerhouse: (1) original feasibility location on alluvium terrace adjacent to river; (2) FRR proposes moving to higher elevation to reduce penstock	FRR §7.5.2 proposes moving powerhouse to higher ground vs original riverside location, and mentions underground powerhouse as seismically superior alternative. Which powerhouse location/type will Tender Specifications require: original riverside surface location, elevated	It has been clarified that the location and orientation of the Powerhouse, whether surface or underground, fall under the scope of the Package-I: Civil and Auxiliary Services Works EPC Contractor. The Package-I EPC Contractor will revalidate the selected layout during the engineering stage and present the corresponding technical and

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		length and flood protection costs; (3) alternative underground powerhouse option noted as seismically superior in Zone-4 but cost/benefit unquantified; (4) subsurface conditions at new locations require investigation; (5) foundational strata different between options; (6) no explicit instruction which option to follow in tender.	surface location, or underground? What are cost/schedule implications of each option?	economic analysis as part of the Level-I and Level-II design responsibilities.
FRR-13	2026-03-11 PKG III VOL-III PART II (FRR) §5.5.2, §11.9 (Pages 5-22 to 5-24, 4-641 to 4-643) 5-23; 4-642 Penstock design contradictions: piers vs trench; material specification missing	Spec: §5 Geology states penstock supported by piers; §15 Construction Planning states laid in excavated trench; drawing AFS-ST-430 shows anchor blocks not piers. Material for penstock missing; recommend ASTM A516 Gr-70 or equivalent Ambiguity: FRR identifies multiple penstock design contradictions: (1) section 5 (Geology) specifies pier support; (2) section 15 (Construction) specifies trench burial; (3) drawing AFS-ST-430 shows anchor blocks instead; (4) penstock material specification completely missing from feasibility report; (5) FRR	FRR §5.5.2 notes contradictions in penstock design between sections (pier vs trench vs anchor blocks) and §11.9 identifies missing penstock material specification. Recommend ASTM A516 Gr-70. Will Tender Specifications clarify penstock support method (piers, trench, or anchored) and confirm material standard before bidding?	Please comply with the specifications and requirements set forth in the RFP/EPC Bidding Document.

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		recommends ASTM A516 Gr-70 pressure vessel steel; (6) sleeve-type expansion joints after anchor blocks missing; (7) hold-down straps for exposed penstock missing; (8) no subsurface investigations along penstock length.		
FRR-14	2026-03-11 PKG III VOL-III PART II (FRR) §14 (Cost Estimates), §6.5 (Equipment Costs) (Pages 6-510 to 6-545) 6-525 to 6-540 Hydroelectric equipment cost estimates contain major gaps and unquantified risks	Spec: Cost estimates based on March 2021 rates; missing cost items: power intake stoplogs, weir gates/stoplogs, spare parts, erection/testing equipment. Workshop equipment cost 'considerably low'. Switchyard equipment cost to be confirmed. Material cost to be adjusted per bidding date Ambiguity: FRR notes multiple cost estimation deficiencies: (1) feasibility cost basis is March 2021 (outdated); (2) missing cost items: intake stoplogs, weir gates, spare parts, workshop equipment; (3) workshop equipment cost 'considerably low and needs to be increased'; (4) switchyard equipment cost needs confirmation; (5) 'detailed cost estimates made on thumb	FRR notes cost estimates based on March 2021 rates and contain missing items (intake stoplogs, weir gates, spare parts, workshop equipment). FRR recommends 'detailed cost estimates' vs thumb- rule approach. Will Employer issue updated cost baseline reflecting FRR-proposed changes (alternative layout, flushing tunnel, powerhouse relocation) and 2026 prices before tender?	Please refer to Volume-I and Volume-II of RFP/EPC Bidding Document.

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		rules' (not engineering-based); (6) material costs to be adjusted at bidding time (unknown escalation); (7) no contingency for design changes cited in FRR (alternative layout, flushing tunnel, powerhouse relocation).		
FRR-15	2026-03-11 PKG III VOL-III PART II (FRR) §12 (Electrical), §14 (Switchyard) (Pages 5-862 to 6-340) 5-887 to 5-968; 6-118 to 6-180 Electrical specifications incomplete: transformer ratings, cable parameters, standards missing	Spec: Missing: electrical equipment layout/arrangement drawings, reference standards for equipment, cable technical parameters, motor control centers (MCCs), CT/PT specifications, tariff metering equipment details, SCADA communication details, fiber optic data requirements Ambiguity: FRR identifies extensive electrical specification gaps: (1) electrical equipment general layout/arrangement drawings missing; (2) reference standards (IEC/IEEE/BS/ASTM) not specified for each equipment; (3) cable technical parameters missing; (4) motor control centers (MCCs) not addressed; (5) current/potential transformer (CT/PT) specifications missing; (6) tariff metering system clarity needed (whether 132/11kV	FRR §12 and §14 identify extensive missing electrical specifications: layout drawings, equipment standards (IEC/IEEE/BS/ASTM), cable parameters, MCCs, CT/PT details, tariff metering, SCADA/fiber optic requirements. Will Employer issue updated electrical design basis/technical specifications before tender, or must EPC Contractor define these details at risk?	Please follow the Technical Specifications as well as Volume-II: Employer's Requirements Part-III: Conceptual Drawings of RFP/EPC Bidding Document.

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		transformer requires metering); (7) SCADA communication details incomplete; (8) fiber optic requirements not detailed; (9) DC supply system recommendations diverge from feasibility (24/48V DC requirements unclear); (10) transformer ratings (22 MVA) not standard.		
FRR-16	2026-03-11 PKG III VOL-III PART II (FRR) §12.10 (Pages 5-951 to 5-977) 5-951 to 5-967 Transformer technical details and ratings unresolved	Spec: Generator transformer rated 22 MVA specified (not standard rating). FRR recommends ON-Load Tap Changer instead of OFF-Load. Unit auxiliary transformer Dry Type recommended. Vector group missing for auxiliary transformers. Impedance of 4% needs review Ambiguity: FRR identifies transformer specification issues: (1) main generator transformer 22 MVA rating 'not standard' (should align with generator capacity change from 54 to ~57 MW per FRR turbine recommendation); (2) feasibility specifies OFF-Load Tap Changer; FRR recommends ON-Load Tap Changer (cost/complexity impact); (3) no explosion	FRR §12.10 identifies transformer specification issues: (1) 22 MVA rating is 'not standard' and may not align with turbine capacity change (54 vs ~57 MW); (2) recommends ON-Load Tap Changer vs feasibility's OFF-Load (cost impact); (3) Dry Type auxiliary transformers recommended; (4) vector group missing; (5) impedance review needed. Will Tender Specifications be updated to reflect these recommendations?	Please follow the Volume-III Part-II Technical Specifications as well as Volume-II: Employer's Requirements Part-III: Conceptual Drawings.

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		prevention system specified for power transformer; (4) auxiliary transformer: Dry Type recommended vs Oil Type in feasibility; (5) vector group missing; (6) impedance of 4% 'needs to be reviewed'; (7) 11/0.4 kV auxiliary transformer voltage specified but may not match system.		
FRR-17	2026-03-11 PKG III VOL-III PART II (FRR) §12.18, §13 (Transmission Line) (Pages 6-118 to 6-425) 6-118 to 6-425 132 kV Switchyard and transmission line capacity/voltage coordination unresolved	Spec: Switchyard location not finalized during detail design. 132/11kV transformer MVA rating to be coordinated with load. Three transmission circuits proposed (one double-circuit, two single-circuit) but T/L expert to decide. Switchyard equipment rating to be revised if transmission line capacity changes Ambiguity: FRR notes switchyard design uncertainties: (1) switchyard location to be finalized during detail design (not fixed); (2) 132/11kV power transformer MVA rating dependent on colony and future load requirements (load estimate not available); (3) three transmission circuits planned (one double- circuit to Aliabad 27km, two single-circuits to Sost 70km) but T/L expert must	FRR §12.18-13 notes switchyard location unfinalized, transformer MVA rating dependent on colony load (data unavailable), and transmission line configuration to be decided by T/L expert. These are interdependent: if T/L capacity changes, switchyard equipment must be revised. Will Employer finalize switchyard location, load requirement, and T/L configuration before	Please comply with the specifications and requirements set forth in the RFP/EPC Bidding Document.

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		determine final configuration; (4) switchyard equipment rated assuming specific T/L configuration; (5) if T/L capacity changes, switchyard equipment rating 'have to be revised accordingly'; (6) cost of switchyard equipment not finalized; (7) conflicting recommendations on transformer tariff metering and CT/PT specification.	tender, or must EPC Contractor design at risk?	
FRR-18	2026-03-11 PKG III VOL-III PART II (FRR) §12.16, §12.17 (Pages 6-329 to 6-363) SCADA and communication system details missing; fiber optic requirements unspecified	Spec: SCADA connection via fiber optic link to NPCC proposed but details missing in feasibility report. Fiber optic specifications, CCTV system, internet/TV services (Triple Services), PABX telephone exchange, LAN details all recommended but not specified in feasibility Ambiguity: FRR identifies SCADA and communication specification gaps: (1) SCADA connection from powerhouse/switchyard to NPCC via fiber optic recommended but 'missing in feasibility report'; (2) fiber optic specifications (type, bandwidth, redundancy, distance, cost) not provided;	What is the final specification and cost allocation for fiber optic SCADA link, CCTV, internet, and LAN systems before tender?	All Specifications have been stated in Volume-II, Part-II (Technical Provisions) of RFP/EPC Bidding Document.

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		(3) CCTV system at switchyard/powerhouse/camp recommended but specifications missing; (4) Internet & TV services (Triple Services) recommended but not specified; (5) PABX/PAX telephone exchange for external communication recommended; (6) separate LAN within powerhouse, switchyard, residential camp recommended; (7) no clarification of cost responsibility or project integration. Self-verification: Spec partially addresses this: "SCADA via fiber optic link to NPCC, CCTV system, internet/TV services, PABX telephone exchange, and LAN... not yet finalized"		
FRR-19	2026-03-11 PKG III VOL-III PART II (FRR) §11 (Environmental & Social), §3.6 (Pages 7-273 to 7-401) 7-282 to 7-401 Environmental and resettlement impact	Spec: Land acquisition noted as 'critical issue' not covered in main environmental chapter. Environmental management plan for operational phase missing. Resettlement framework incomplete. Seasonal construction restrictions not detailed	FRR §11 identifies land acquisition as 'critical issue' not adequately covered, resettlement framework incomplete, and operational environmental management plan missing. Will Employer confirm land	All land acquisition and resettlement shall be completed by the Employer before EPC Contractor mobilization at site under Package-I. Compensation payment to the locals for their land acquisition will be the responsibility of Employer, and the

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	assessment incomplete; land acquisition status unclear	Ambiguity: FRR identifies environmental and social risk gaps: (1) land acquisition described as 'critical issue' but not adequately addressed in environmental chapter; (2) resettlement assessment incomplete; (3) environmental management plan for operational phase missing from main report; (4) cultural heritage protection framework incomplete; (5) seasonal environmental/construction restrictions not specified (e.g., wildlife protection windows); (6) status of land surveys and community consultations unclear; (7) cost and schedule impacts of land acquisition/resettlement on construction timeline unknown.	acquisition status, provide resettlement action plan, and specify seasonal construction restrictions before tender? What cost/schedule impact on EPC works?	EPC Contractor has no resettlement obligations. For Environmental Management Plan please refer to Table 9-1 of the EIA Report.
FRR-20	2026-03-11 PKG III VOL-III PART II (FRR) §5.6 (Pages 5-26 to 5-27, 3-413 to 3-481) 5-26; 3-413 to 3-481 Concrete aggregate and borrow material sources	Spec: Rock aggregate quality testing limited to few samples. Fine aggregate testing incomplete; 'missing testing recommended'. Marble quarry noted (economic importance, not permitted for concrete). Rock quarries need location confirmation. ASR (Alkali-Silica Reaction) testing incomplete per ASTM C1260	FRR §5.6 notes aggregate quality testing is limited, fine aggregate testing incomplete, and sources require confirmation. Recommends ASR testing per ASTM C1260 and C295. Will Employer	It has been clarified that identification and confirmation of borrow areas, quarries, and cement sources will be undertaken by the Package-I: Civil and Auxiliary Services Works EPC Contractor.

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	not confirmed; aggregate quality testing limited	Ambiguity: FRR notes material sourcing and quality test gaps: (1) rock aggregate testing limited to few samples; (2) fine aggregate testing 'missing' - recommendations to test with more samples; (3) aggregate sources require confirmation (location, distance, haul cost); (4) marble quarry identified but marked as 'not permitted for concrete use' (conflict with construction materials section); (5) ASR testing incomplete - recommends ASTM C1260 and C295 petrographic exam; (6) cement source selection dependent on availability at detail design; (7) reinforcing steel source not specified; (8) test pit locations may differ from actual borrow areas.	identify and confirm all borrow areas, quarries, and cement sources before tender, with distance/haul cost data? Or must EPC Contractor select sources during detail design at risk?	
FRR-21	2026-03-11 PKG III VOL-III PART II (FRR) §4.5, §4.11, §9.2 (Pages 4-6 to 4-30, 9-1 to 9-2) 4-8; 4-30; 9-2 Hydrological data outdated: flows study	Spec: Flow study based on 1966-2015 data (missing 2016- 2018 data). Flows study 'need to be updated in detail design stage'. FRR recommends 2022 flood event be considered for weir design. Latest hydrological information to be accessed	FRR §4.11 notes flow study covers 1966-2015 (missing 3 years of recent data) and recommends flows study 'need to be revised/updated during detail design'. Also notes	The flood estimation has been updated using the extended hydrological dataset (1966–2024), and the corresponding peak inflow for the 10,000-year return period has been determined as 3250 cumecs.

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	limited to 1966-2015; 2022 flood event not incorporated	and hydrology updated with global climate change impacts Ambiguity: FRR identifies hydrological data limitations: (1) feasibility flow study covers 1966-2015 (missing 2016-2018); (2) 2019-2020 data shows lower flows than long-term average; (3) FRR explicitly recommends flow study 'need to be revised/updated during detail design'; (4) 2022 flood event (recent) not incorporated in design flood assessment; (5) global climate change effects on flood patterns not addressed; (6) stream gauging station not yet installed at project site; (7) winter low-flow estimates unconfirmed.	2022 flood event should be considered. Will Employer fund hydrological update including 2022 flood and recent climate trends before tender, or must EPC Contractor conduct study at its cost?	The flood routing shall be recomputed during the detailed design stage using the updated elevation–area–capacity curves derived from the 2025 topographic and hydrographic surveys, along with the revised spillway rating curve. This analysis will be used to determine the outflow discharge through the spillway and the corresponding maximum flood level rise within the reservoir (Attabad Lake).
FRR-22	2026-03-11 PKG III VOL-III PART II (FRR) §4.5.3, §8.2 (Pages 4-13 to 4-15, 8-3 to 8-5) 4-13 to 4-15 Winter flow minimums and minimum flow for turbine operation unconfirmed	Spec: Design discharge 60 m ³ /s available 'almost half year'. Winter flows (Dec-April) are low; exact minimum flow value and turbine minimum operational threshold not clearly specified. Impact on plant factor and winter generation capacity unclear Ambiguity: FRR notes water availability uncertainty: (1) design discharge 60 m ³ /s available ~6 months (June to mid-	FRR §8.2 notes design discharge 60 m ³ /s available ~6 months; winter flows (Dec-April) are significantly lower. Feasibility mentions turbine operational 'certain limit of low flows' but specific value not stated. Will Employer confirm	The hydrological analysis on a daily basis has already incorporated in the Feasibility Review Report (FRR), Volume-III, Part-III of RFP/EPC Bidding Document.

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		December) per feasibility; (2) winter period (Dec-April) shows significantly lower flows; (3) exact minimum flow value not clearly stated; (4) turbine minimum operational discharge threshold not confirmed (feasibility mentions 'certain limit of low flows' but no specific value); (5) impact on winter generation and plant factor (79%) not fully analyzed; (6) reservoir storage strategy for winter power supply not detailed; (7) minimum environmental flow requirements not specified.	minimum winter flow data and turbine minimum operational discharge threshold before tender? How does this affect winter generation forecasts?	
FRR-23	2026-03-11 PKG III VOL-III PART II (FRR) §7.5.2 (Pages 7-13 to 7-17) Alternative layout proposal creates design and cost uncertainty: not final	Spec: FRR proposes 'Modified Alternate-1A layout' with gabion weir, flushing tunnel, relocated powerhouse. States 'layout modified by MC is...to be checked for technical and economic viability during Detail design stage by EPC Contractor' Ambiguity: FRR's 'Modified Alternate-1A' represents substantial departure from feasibility study layout but explicitly states modifications 'to be checked for technical and economic viability during Detail design stage by EPC Contractor'. This implies: (1)	FRR §7.5.2 proposes 'Modified Alternate-1A layout' (gabion weir, flushing tunnel, relocated powerhouse) but explicitly states this must be 'checked for technical and economic viability during Detail design stage by EPC Contractor'. Is this proposed layout final or must contractors revalidate	The EPC Contractor of Package-I: Civil and Auxiliary Services Works will revalidate the selected Project layout during the engineering stage and present the corresponding cost analysis as part of the Level-I and Level-II design responsibilities.

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		layout is not final/approved; (2) EPC contractor must validate feasibility; (3) no cost baseline for new layout; (4) schedule impact of validation work unknown; (5) risk that cost/schedule increases prompt reversion to original layout; (6) uncertainty over which layout governs tender bid estimates.	it? What is baseline cost and schedule for original vs modified layout?	
FRR-24	2026-03-11 PKG III VOL-III PART II (FRR) §5.5.1 (Pages 5-21 to 5-22) 5-21 to 5-22 Rock permeability test incomplete; one borehole shows 100% water loss	Spec: Permeability of weir area very high; BH-01 drilling showing 100% water loss and water head not maintained/built during permeability test. Lugeon tests recommended at intake and surge tank during detail design Ambiguity: FRR notes critical permeability concern: (1) weir foundation area shows extremely high permeability (100% water loss in BH-01); (2) permeability test inconclusive (water head could not be established); (3) Lugeon test data at other key locations (intake, surge tank) missing; (4) grouting/seepage control strategy for high-permeability strata unspecified; (5) impact on dam safety, foundation	FRR §5.5.1 reports extremely high permeability at weir area (100% water loss in BH-01) and recommends Lugeon tests at intake/surge tank during detail design. This affects seepage control, grouting strategy, and foundation treatment cost. Will Employer fund Lugeon testing and confirm seepage control approach before tender?	It has been clarified that geotechnical investigations concerning rock permeability, seepage control, and foundation treatment are part of the Package-I: Civil and Auxiliary Services EPC Contractor's responsibilities and do not fall under Package-III Electro-Mechanical Works. Any investigations required solely for Electro-Mechanical equipment installation under Package-III shall be carried out by the EPC Contractor at its own risk and cost, in line with Sub-Clause 1.13.18 of

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		treatment, and grouting cost/schedule unknown.		the Specific Provisions, Volume-II of the RFP/EPC Bidding Document.
FRR-25	2026-03-11 PKG III VOL-III PART II (FRR) §7.5.1 (Pages 7-9 to 7-10) 7-9 to 7-10 Construction access and roads - KKH tunnel proximity and load limits unspecified	Spec: Closest part of headrace scheme to KKH tunnel at surge tank: surge tank bottom 2385 m, KKH tunnel invert 2376 m, perpendicular distance 65 m. Four KKH tunnels exist in area. Construction via adit from existing road, leaving 3-5m rock plug Ambiguity: FRR identifies construction access considerations: (1) headrace tunnel proximity to KKH tunnel at surge tank (only 65 m perpendicular distance); (2) four KKH tunnels exist in project area; (3) proposed construction approach via adit from existing road with temporary rock plug; (4) access road conditions, load limits, seasonal constraints not specified; (5) coordination with KKH operations/traffic during construction unclear; (6) impact on Karakoram Highway traffic and public safety during blasting/excavation not addressed.	FRR §7.5.1 notes headrace tunnel is 65 m perpendicular distance from KKH tunnel at surge tank, and proposes construction via adit with temporary rock plug. Construction access details (road conditions, load limits, KKH coordination, traffic impact) not specified. Will Employer confirm access route, load-carrying capacity, and KKH traffic management plan before tender?	The construction of access arrangements, including route selection, road conditions, and traffic management, fall within the scope of the Package-I: EPC Contractor. The EPC Contractor of Package-I will be responsible for providing and maintaining the required access route and coordinating with relevant authorities to ensure safe construction and traffic management in line with standards specified in Package-I RFP/EPC Bidding Document.

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FRR-26	2026-03-11 PKG III VOL-III PART II (FRR) §4.3 (Pages 4-3 to 4-5) 4-3 to 4-5 Climate and meteorological data incomplete; snow/rainfall/temperature ranges not finalized	Spec: Climatological data from Skardu and Gilgit stations used as proxy (actual project site data limited). No wind data specific to Attabad Lake (assumed 100 km/hr with speed correction factors). Snow/ice conditions for winter construction not specified Ambiguity: FRR notes meteorological data limitations: (1) climate data from Skardu and Gilgit used as proxy for Attabad Lake (elevations and microclimates differ); (2) no site-specific wind data for Attabad Lake (assumed 100 km/hr); (3) no site-specific temperature extremes (design for concrete curing, equipment operation); (4) snow/ice conditions for winter construction not specified; (5) rainfall intensity for construction dewatering not addressed; (6) seasonal constraints for concrete placement, excavation, and equipment installation not defined.	FRR §4.3 notes climate data from Skardu/Gilgit stations (not site- specific) and wind speed assumed at 100 km/hr. No site-specific temperature extremes, snow conditions, or rainfall intensity for construction planning. Will Employer provide one year of site- specific meteorological data (temperature, wind, snow, rainfall) before tender to support construction planning?	The Employer has provided climatological data in Sub-section 4.3 of the Feasibility Review Report pursuant to Sub-Clause 2.5 (Site Data and Items of Reference) of the Section VII General Conditions. (Climatology) Volume-I, RFP/EPC Bidding Document. Notwithstanding the foregoing, pursuant to Sub-Clause 4.10 (Use of Site Data) and Sub-Clause 4.12 (Unforeseeable Physical Conditions) of Section VII General Conditions, Volume-I RFP/EPC Bidding Document, the Proposer shall be solely responsible for obtaining and satisfying itself as to all data and information necessary for the execution of the Works.

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FRR-27	2026-03-11 PKG III VOL-III PART II (FRR) §11 (Environmental & Social) (Pages 7-273 to 7-282) Environmental flow requirement and post-construction environmental monitoring not detailed	Spec: Environmental management plan for operational phase missing from feasibility report. Minimum flow requirement for aquatic life not specified. Post-construction monitoring protocol and responsibility not clarified Ambiguity: FRR notes environmental operation gaps: (1) environmental management plan for operational phase 'missing from feasibility report'; (2) minimum environmental flow (instream flow) requirement for aquatic life not quantified; (3) post-construction environmental monitoring protocol (fish surveys, water quality, sediment impact) not detailed; (4) responsibility for monitoring (owner, contractor, government) unclear; (5) cost of environmental compliance and mitigation measures un-estimated.	FRR §11 notes environmental management plan for operational phase 'missing' and minimum environmental flow requirement not specified. Will Employer define minimum instream flow requirement and post-construction environmental monitoring protocol (responsibility, cost, duration) before tender?	Minimum environmental flow requirements have been referenced in Section 8.4.2.3 of the EIA Report as Volume-III, Part-IV, Additional Information of RFP/EPC Bidding Document. The Environmental Management Plan (EMP) has been provided in Table 9.1 of the EIA Report as Volume-III, Part-IV, Additional Information of RFP/EPC Bidding Document and will be finalized during detailed design and Employer's review in line with applicable regulatory standards.

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Environmental Impact Assessment (EIA) Report				
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EIA-1	EIA Report, Chapter 2.3, Section 9.6.1 Compliance Procedure for Obtaining NOC from GB EPA Page 2-9, 9-6 NOC and Environmental Approval Responsibility	Spec: WAPDA will submit EIA to GB EPA to obtain NOC / Environmental Approval. Approval from GB EPA is mandatory before commencement of project activities. Ambiguity: The EIA states WAPDA obtains the NOC, but does not explicitly state whether the Contractor must obtain subsidiary NOCs (from Forest, Wildlife, Archaeology departments) before or after contract award, or who bears those costs.	Q1: Will the Employer (WAPDA) obtain all environmental NOCs (from EPA, Forest, Wildlife, Archaeology departments) before invitation to bid, or will the Contractor be required to obtain subsidiary NOCs during detailed design/mobilization? Who pays for these subsidiary NOC applications?	The Employer shall be responsible for obtaining all NOCs. In case EPC Contractor will be obtaining any NOC, the payment of said NOC will be paid by the Employer to the EPC Contractor.
EIA-2	EIA Report, Chapter 9.1-9.4 Environmental Management Plan - General and Institutional Setup Page 9-1 to 9-5 Environmental Management Plan (EMP) Amendment and Ownership	Spec: EMP is a 'live document' and needs to be reviewed and updated at each stage of the Project. The whole EMP will be included as a clause of the contract documents. Site-Specific EMPs (SSEMPs) will be developed by Contractor before construction. Ambiguity: It is unclear who has authority to approve amendments to the EMP during construction, what the amendment process timeline is, and whether Contractor must	Q2: Who has final approval authority for amendments to the EMP during construction (MC, WAPDA, GB EPA, or Contractor)? What is the approval timeline? If GB EPA or WAPDA initiates EMP changes during construction, is the Contractor responsible for implementation costs, or	The Employer will approve the amendments to the EMP. The approval time for the amendments to the EMP will be Two (02) weeks.

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		absorb costs of EMP changes initiated by Employer or GB EPA compliance audits.	are they treated as variations?	
EIA-3	EIA Report, Section 9.8-9.12, Table 9-4 Environmental Monitoring Plan and Cost Breakdown Page 9-57 to 9-75 Environmental Monitoring Costs and Responsibility	Spec: Cost for environmental management and monitoring will be the part of the contract document with the Contractor. Annual estimated cost: Pre-construction PKR 11.79M, Construction (36 months) PKR 98.49 M, O&M (annual) PKR 2.13 M. Ambiguity: The cost breakdown in Table 9-4 totals PKR 126.5M, but it is ambiguous whether: (1) Contractor must bear 100% of monitoring costs or share with WAPDA, (2) MC staff costs (PKR 6M/year for environment personnel) are Contractor or MC responsibility, (3) Third-party monitoring costs (PKR 1.5M biannual) are paid by Contractor, and (4) costs increase with market inflation during 3-year construction.	Q3: Will the Contractor be required to fully fund all environmental monitoring costs (PKR 98.49M for 3-year construction phase) listed in Table 9-4? Are MC's HSE and environment personnel (PKR 6M/year) costs the responsibility of the Contractor or the Employer? Will third-party monitoring costs be Contractor's direct expense, and will rates be adjusted for inflation annually?	Yes, the EPC Contractor will be responsible for all environmental monitoring costs, Environment staff cost and third-party monitoring cost. The Proposals shall be prepared as per the best estimation of inflation to avoid any claims.
EIA-4	EIA Report, Section 9.4.2(d), Section 9.6.1 GB EPA Responsibilities and	Spec: GB EPA will undertake audit of project activities (both construction and operation) with respect to protocols as	Q4: What specific conditions, limits, and compliance thresholds will	This issue has been at the sole discretion of GB EPA which is an independent

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	NOC Conditions Page 9-5, 9-6 Environmental Permit Conditions and GB EPA Audit Authority	defined in EMP and NOC. GB EPA will conduct random site visits and meetings to ensure compliance. Ambiguity: The EIA does not specify: (1) what specific conditions will be attached to the NOC when issued by GB EPA, (2) whether GB EPA has authority to impose additional conditions after NOC issuance, (3) frequency and scope of GB EPA audits, (4) what remedial actions and costs Contractor must bear if non-compliant findings are issued, and (5) whether enforcement includes project suspension powers.	be attached to the NOC issued by GB EPA? Can GB EPA impose new conditions or modify NOC terms after construction has commenced? What is the procedure and timeline for Contractor to remedy non-compliance findings from GB EPA audits, and who bears the cost of remedial actions?	authority, beyond the control of Employer (WAPDA).. Any cost and time shall be borne by the EPC Contractor.
EIA-5	EIA Report, Section 5.2.12, 8.5.1(iv), 9.7 (Table 9-1, Item 11) Air Quality Monitoring and Mitigation Page 5-17, 8-50 to 8-52,9-60 Dust and Air Quality Standards and	Spec: Ambient air quality monitoring for CO, SO ₂ , NO _x , HC and PM _{2.5} /PM ₁₀ . NEQS compliance required. During construction, dust control measures including water bowsers, dust masks, and regular monitoring per environmental plan. Ambiguity: The EIA specifies NEQS compliance but does not explicitly state: (1) the quantified dust limits (mg/m ³) for PM ₁₀	Q5: What are the specific quantified dust limits (PM ₁₀ and PM _{2.5} in mg/m ³) that the Contractor must comply with under NEQS? What is the monitoring frequency (quarterly as per Table 9-4 or more frequent)? If air quality	Please refer to the NEQS attached with these responses to Post-Proposal Clarification No. 01 by Proposer for the compliance limits. The monitoring frequency shall be quarterly as per the EIA. Exceedance shall be

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	Monitoring Frequency	and PM2.5, (2) monitoring frequency during construction (quarterly per Table 9-4, but some sections reference 'regular monitoring' without specificity), (3) exceedance remedial procedures and contractor penalties, (4) who determines exceedance and triggers mitigation, and (5) whether contractor is liable for natural dust events (e.g., wind storms) outside construction activities.	monitoring shows non-compliance, who has authority to declare exceedance, what corrective actions must Contractor implement within what timeframe, and what are the financial penalties for non-compliance?	declared by GBEPA, Employer. The corrective actions will be taken as per the instructions of the Employer. The penalties shall be decided as per the nature of exceedance.
EIA-6	EIA Report, Section 5.2.12, 8.5.1(xi), 9.7 (Item 11), Annex-VI(KPI) Noise and Vibration Mitigation and Monitoring Page 5-17, 8-57 to 8-62 Noise Limits and Vibration Standards Near Sensitive Receivers	Spec: Noise levels range 50-65 dB without traffic. During construction, high noise equipment restricted to 9 AM-5 PM. NEQS compliance required. Noise reduction equipment to be fitted. Quarterly monitoring per NEQS standard dBA Leq. Ambiguity: The EIA specifies NEQS compliance and daytime work restrictions but does not clearly state: (1) the quantified noise limits (dB(A)) for residential vs. commercial areas, (2) whether vibration limits are specified separately (no numerical limits found), (3) sensitive	Q6: What are the specific noise limits (in dB(A)) that the Contractor must meet near sensitive receivers (schools, mosques, residences) per NEQS? Are separate vibration limits specified (in mm/s or peak particle velocity)? Will the Contractor be required to conduct baseline noise and vibration measurements before	Please refer to the NEQS attached with these responses to Post-Proposal Clarification No. 01 by Proposer for the compliance limits. For vibration limits please consider the IFC guidelines. Yes, the EPC Contractor shall conduct baseline noise and vibration monitoring. The exceedance shall be

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		receptors identified (e.g., schools, mosques, hospitals near site—none listed in detail), (4) monitoring locations and whether Contractor must conduct baseline before construction, (5) exceedance remedial procedures, and (6) whether contractor is liable for noise from third-party traffic or suppliers.	mobilization? What is the procedure if monitoring shows exceedance—who declares it, what is the remedial timeline, and what are the penalties?	declared by GBEP, Employer. The corrective actions will be taken as per the instructions of the Employer. The penalties shall be decided as per the nature of exceedance.
EIA-7	EIA Report, Section 3.10.6, 8.5.1(vii), 9.7 (Item 7) Wastewater Generation and Treatment Page 3-17, 8-37 to 8-47, 9-22 Wastewater Treatment and Discharge Standards	Spec: Estimated wastewater generation: 28,000 liters/day from 350 workers. Treatment via septic tanks and biological treatment technology. Discharge per NEQS. Proper monitoring to check compliance. Septic tank locations: site elevation to avoid floods, minimum 500m from sensitive receptors. Ambiguity: The EIA specifies NEQS compliance but does not provide: (1) specific discharge standards (e.g., BOD, TSS, fecal coliforms limits in mg/L), (2) design criteria for septic tanks (capacity, retention time, approval authority), (3) monitoring frequency for wastewater quality (sampling locations, parameters,	What are the specific quantified NEQS standards (BOD, TSS, fecal coliforms, pH in mg/L) and monitoring frequency (daily/weekly/monthly) for wastewater discharge? Who is responsible if septic systems fail or overflow during heavy rains?	Please refer to the NEQS attached with these responses to Post-Proposal Clarification No. 01 by Proposer for limits. Whereas monitoring frequency shall be as per the EIA report. The septic system failure and operations shall be the responsibility of the EPC Contractor

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		testing method), (4) final discharge route (to Hunza River or on-site absorption), (5) responsibility if septic tank fails or overflows during rainy season, and (6) decommissioning procedure and responsibility for final closure.		
EIA-8	EIA Report, Section 3.10.6, 8.5.1(viii), 9.7 (Item 8), 9.33 Solid Waste Management and Waste Disposal Sites Page 3-17, 8-48 to 8-63, 9-67 Construction Waste Disposal Sites and Tipping Fees	Spec: Solid waste estimated 157.5 kg/day. Waste will be safely disposed in demarcated waste disposal sites. Waste segregation at source: organic, recyclable, reusable, and disposal waste. Disposal sites must be designated demarcated areas 'following general guideline principle for the contractor.' Ambiguity: The EIA does not specify: (1) which party (Employer, District Authority, Contractor) will designate and provide waste disposal sites, (2) what distance/buffer from settlements is required, (3) whether land is acquired by Employer or leased by Contractor, (4) tipping fees or costs per ton/kg, (5) who manages the disposal site operations, (6) final closure/restoration obligations and	Who designates and provides the construction waste disposal site(s)— Employer or Contractor? What are the tipping/disposal fees (if any) and who bears the cost?	The EPC Contractor will designate and provide the construction waste disposal site(s) for approval by the Employer/. The EPC Contractor will estimate required cost and include in its Proposal Price.

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		timeline, (7) responsibility if site is damaged or causes environmental pollution, and (8) for tunnel excavation muck (~1,000,000 m³), is a separate spoil disposal site allocated by Employer? Self-verification: Spec partially addresses this: "Construction waste will be routinely collected and safely disposed of in clearly demarcated waste disposal sites located near each subproject site following international best practices"		
EIA-9	EIA Report, Section 3.10.2, 8.5.1(ii), 9.31, 9.32 Borrow Area Management and Restoration Plan Page 3-15, 8-38 to 8-43, 9-66 Borrow Pits and Quarry Restoration Obligations	Spec: Most excavated material will be used for backfilling or disposal at designated sites. EPC Contractor must prepare development and operation plan for borrow areas before extraction. Top soil must be stored, and areas restored with indigenous vegetation after construction. Ambiguity: The EIA specifies Contractor responsibility but does not detail: (1) who identifies and allocates borrow pit/quarry sites (Employer or Contractor), (2) whether Contractor must acquire land or whether	Will the Employer designate borrow pit and quarry sites, or will the Contractor identify and acquire them? Who owns/controls the land—Employer, Contractor, or private owners?	The concerns of the E&M Contractor regarding borrow pits and quarry sites are noted. The Environmental Impact Assessment (EIA) Report covers the entire Project, including Civil Works and Transmission Line Works. Matters pertaining to borrow pits and quarry sites as addressed in the EIA Report relate to the scope

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		Employer provides sites, (3) specific restoration criteria (slope angle, vegetation cover % and survival rate, timeframe), (4) whether restoration is contractor's final obligation or Employer takes over post-construction, (5) restoration cost estimates or responsibility if borrow area becomes unproductive, and (6) environmental liability if borrow operations exceed approved boundaries or damage groundwater. Self-verification: Spec partially addresses this: "it is required to restore the disturbed area to its original conditions wherever it is possible that is the sole responsibility of the Contractor...top soil should be stored...quar..."		of the Contractor responsible for Civil Works and do not fall within the scope of the E&M Contractor.

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EIA-10	EIA Report, Section 8.5.1(v), 8.5.1(viii), 9.39, Annex-IV (HSE Plan) Hazardous Waste and Good Engineering Practices Page 8-48 to 8-63, 9-70 EIA Report, Section 8.5.1(v), 8.5.1(viii), 9.39, Annex-IV (HSE Plan) Hazardous Waste and Good Engineering Practices Page 8-48 to 8-63, 9-70	Spec: Hazardous waste including used oil from machinery must be managed. Standard Operating Procedures (SOPs) for handling, storage, and transportation required. Chemicals stored per Material Safety Data Sheets (MSDS). All toxic and hazardous materials must be completely removed from site at completion. Ambiguity: The EIA does not specify: (1) a designated facility or contractor for hazardous waste disposal (whether Employer provides or Contractor arranges), (2) compliance certificates or permits required for hazardous waste handlers, (3) transportation standards and liability for spills, (4) cost responsibility for hazardous waste treatment/disposal, (5) recycling options (e.g., used oil recovery value), (6) whether storage must be in bunded areas with secondary containment, and (7) responsibility if hazardous waste contaminates soil or groundwater during handling.	Who arranges and approves disposal of hazardous waste (used oil, batteries, solvents)—the Contractor independently or must approval be obtained from environmental/regulatory authority? What is the prescribed disposal method and final disposal location?	The disposal of hazardous waste is carried out by the EPC Contractor through GBEP approved vendors and/or after the approval from Employer. The EPC Contractor shall provide the details of disposal method and final disposal location in detailed design.

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EIA-12	EIA Report, Section 3.7.12, 8.5.1(i), 9.32 Restoration and Rehabilitation Plan Page 3-7, 8-36 to 8-37, 9-67 Camp Decommissioning and Restoration	Spec: After completion of construction work, it is required to restore the disturbed area to its original conditions wherever it is possible. This is the sole responsibility of the Contractor. Contractor must obtain clearance certificate from consultant. Ambiguity: The EIA assigns restoration to the Contractor but does not specify: (1) restoration standards (e.g., ground level, topography, test results required), (2) environmental compliance criteria (soil testing, groundwater testing), (3) timeline for completion (e.g., within 6 months of project completion), (4) third-party inspection/certification process, (5) cost estimates for camp decommissioning and site restoration, (6) what happens if restoration is inadequate, and (7) whether Employer retains remediation obligation post-handover.	Q11: What specific restoration standards must be met for construction camps and compound sites (e.g., topography restoration, soil clean-up criteria, surface testing requirements)? What is the timeline for completion of site restoration after construction ends? Will the Contractor be required to conduct soil and groundwater testing to certify no contamination remains? If restoration is deemed inadequate, can the Employer withhold Defects Liability Period (DLP) funds or require additional remediation at Contractor's cost?	The site should be restored to the original state or better than original. The restoration time is one month after completion. The EPC Contractor will be required to conduct soil and groundwater testing to certify no contamination remains. Yes, the Employer can withhold Defects Notification Period (DNP) funds or require additional remediation at EPC Contractor's cost.

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EIA-14	EIA Report, Section 3.7.12, 8.5.1(i), 9.7 (Item 9) Temporary Land Acquisition and Camp Site Selection Page 3-7 to 3-8, 8-31 to 8-32, 9-14 to 9-15 Worker Camp Location Criteria and Environmental Siting	Spec: Contractor camp location will be finalized by the EPC Contractor at detailed design stage. Camp site must not be subject to periodic flooding. Camp must have no resettlement issue. General site selection criteria provided (avoid forests, wildlife sanctuaries, game reserves, minimum 500m from sensitive receptors). Ambiguity: The EIA specifies selection criteria but does not state: (1) who must approve Contractor's proposed camp site (MC, WAPDA, GB EPA, local authority), (2) environmental impact assessment for camp site (EIA required for site selection), (3) approval timeline and authority hierarchy, (4) whether Contractor can change camp location during construction and under what conditions, (5) remediation requirements if camp site is found to be on protected land or violates criteria, and (6) responsibility if flood or landslide damages camp during construction. Self-verification: Spec partially addresses	Who has final approval authority over the contractors camp site selection- Management Consultants, WAPDA, GP EPA or District Administration?	The EPC Contractor's camp proposals shall be submitted to the Employer and based on the approval, it shall be decided/instructed to obtain approvals from GB-EPA and District Administration (based on the nature, extent and land requirements of camp).

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		this: "Site for construction camp will be selected at least 500 m away from the settlements...EPC Contractor will ensure that all these facilities fulfill the requirements for residential..."		
EIA-15	EIA Report, Section 5.3.5, 8.5.2, 8.6.2 Fauna Protection and Construction Impacts Page 5-29 to 5-31, 8-23 to 8-27, 8-40 to 8-43 Protected Species and Hunting Restrictions	Spec: Fauna in area: snow leopard, ibex, markhor (endangered). Trophy hunting permitted under government license. Code of Conduct prohibits illegal hunting and procurement of local fauna. Project located outside wildlife sanctuaries and game reserves. Ambiguity: The EIA prohibits illegal hunting but does not specify: (1) seasonal restrictions during breeding periods (e.g., March-June for birds), (2) monitoring mechanisms to enforce hunting prohibitions on workforce, (3) penalties for violations (Contractor liability), (4) liability if protected species (e.g., snow leopard) are harmed during construction, (5) whether Contractor must employ wildlife monitors, and (6) notification protocol if protected species are sighted during construction.	What are the specific seasonal construction restrictions (dates for bird nesting season, other critical periods)? Who approves construction schedules relative to wildlife protection periods?	The EPC Contractor shall conduct a site specific assessment of the critical breeding periods (if any) in its site-specific Environmental and Social Management Plans and propose mitigation measures accordingly (if required). This will be subject to approval from Employer.

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		Self-verification: Spec partially addresses this: "Special measures shall be adopted to minimize impacts on the wild birds, such as avoiding noise generating activities during the critical periods of breeding...Hunting, poaching an..."		
EIA-16	EIA Report, Section 8.5.1(iii), 9.7 (Item 3) Landslide Mitigation and Blasting Management Page 8-33 to 8-37, 9-18 to 9-21 Blasting Management and Community Notification	Spec: EPC Contractor will prepare Management Plan for blasting activities. Blasting should be avoided or minimized where possible. If inevitable, low intensity explosive materials should be used instead of high intensity. Notifications and monitoring of locals required. Ambiguity: The EIA requires a blasting plan but does not specify: (1) noise and vibration limits for blasting (dB(A) and mm/s or peak particle velocity), (2) community notification protocol (advance notice timeframe), (3) allowable blasting hours (e.g., 9 AM-5 PM on weekdays only), (4) distance from sensitive structures requiring monitoring, (5) responsibility if vibration damages nearby structures (e.g.,	Q15: What are the quantified noise and vibration limits for blasting operations per NEQS and engineering standards? Must the Contractor obtain advance government approvals for blasting activities? What is the community notification protocol—how many days in advance must notice be given, and how will notices be distributed to affected residents? If vibrations from blasting cause structural damage to nearby buildings	Yes, the EPC Contractor shall obtain advance approval for blasting activities from relevant department. The community notification protocol depends on the timing of Explosive, quantum of explosive and the location of receptors. If vibrations from blasting cause structural damage to nearby buildings or heritage sites the EPC Contractor shall be responsible for repairs.

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		houses, heritage sites), and (6) requirement for pre-blasting baseline structural surveys.	or heritage sites, who is liable for repairs?	
EIA-17	EIA Report, Section 5.2.3-5.2.4, 8.4.1(i), 8.5.1(iii) Seismicity, Land Erosion, and Geotechnical Issues Page 5-5 to 5-8, 8-6 to 8-9, 8-33 to 8-37 Geology and Geotechnical Investigations	Spec: Project in Seismic Zone 2B (PGA 0.16-0.24g). Geotechnical investigations required along headrace tunnel. Risk of landslides exists. Confirmatory geotechnical investigations recommended for design. Ambiguity: The EIA recommends geotechnical investigations but does not specify: (1) who is responsible for conducting additional geotechnical investigations (Contractor as part of detailed design or Employer), (2) funding responsibility for investigations, (3) approval timeline for investigation results, (4) whether unforeseen geological conditions (e.g., higher water table, weak rock, fault zones) discovered during construction will be treated as variations, and (5) liability if geotechnical conditions exceed design assumptions and cause construction delays or cost overruns.	Q16: Will the Contractor be required to conduct additional detailed geotechnical investigations along the headrace tunnel and other critical components, or will these be Employer-funded pre-bid investigations? If unforeseen geological conditions (weak rock, high water inflow, fault zones) are discovered during construction, will these be treated as variations entitling the Contractor to extension of time and cost recovery?	It has been clarified that geotechnical investigations related to the headrace tunnel, overall site stability, and other Civil Works components do not fall under the scope of Package-III: Electro-Mechanical Works EPC Contractor. These investigations are the responsibility of the "Package-I" Civil and Auxiliary Services Works EPC Contractor. Any additional geotechnical investigations specifically required for the installation of Electro-Mechanical Equipment under Package-III shall be carried

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				out by the EPC Contractor at its own risk and cost, in accordance with Sub-Clause 1.13.18 of the Specific Provisions, Volume-II of the RFP/EPC Bidding Document.
EIA-18	EIA Report, Section 8.5.1(ix), 9.7 (Item 8), 9.6.2 Land Acquisition and Resettlement Process Page 8-34 to 8-37, 9-13 to 9-16, 9-47 to 9-50 Resettlement and Land Acquisition Completion	Spec: Government owned land to be acquired per GB government policy. Private land acquired per Land Acquisition Act 1894. Total estimated land: 777.5 acres (permanent for reservoir impounding, 183 acres for project structures). Resettlement process will start before construction phase. Compensation given to displaced persons. Ambiguity: The EIA describes the resettlement process but does not specify: (1) timeline for completion of land acquisition and resettlement before Contractor mobilization, (2) whether Contractor is responsible for any resettlement activities or if this is wholly Employer's responsibility, (3) status of	Q17: Will all land acquisition and resettlement be completed before the Contractor mobilizes, or will the Contractor need to work on phased land availability? Is resettlement and compensation the sole responsibility of the Employer and District Administration, or will the Contractor have any resettlement obligations? If affected persons challenge compensation or resist relocation during	All land acquisition and resettlement will be completed by the Employer/GoGB before Contractor mobilization under Package-I. Compensation is the responsibility of GoGB, and the Contractor has no resettlement obligations.

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		compensation disbursements (pending or completed), (4) responsibility if resettlement disputes arise during construction, (5) whether Contractor has access to all project land on day 1 of mobilization or phased access, and (6) what happens if affected persons challenge compensation or resist	construction, who is responsible for resolution and any resulting construction delays?	
EIA-19 NADR O- WED	EIA Report, Chapter 7, Section 9.7 Grievance Redress Mechanism and Committee Page 7-1 to 7-2, 9-30 Community Grievance Redress Mechanism and GRC Funding	Spec: WAPDA will establish a Grievance Redress Committee (GRC) to facilitate resolution of complaints. GRC composition: WAPDA, Project Director, WAPDA Environment Cell, GB EPA, and representatives of affected communities. GRC is empowered to take binding decisions. Ambiguity: The EIA specifies GRC establishment but does not detail: (1) operational cost and who funds GRC (Employer or Contractor), (2) whether Contractor must contribute funds for community outreach/compensation for grievances, (3) timeline for GRC to resolve grievances (target resolution timeframe),	Will the Grievance Redress Committee (GRC) be fully funded by the Employer, or must the Contractor contribute? What is the target timeline for GRC resolution of complaints?	All the activities, tools and equipment required for GRC (Grievance Redressal Committee) will be funded by the EPC Contractor. For GRC nomination from EPC Contractor, existing staff of EPC Contractor can be utilized.

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		(4) appeal mechanism if GRC decision is contested, (5) remedial action if GRC finds Contractor non- compliant, and (6) whether any community development fund contribution is required from Contractor. Self-verification: Spec partially addresses this: "WAPDA will establish a Grievance Redress Committee (GRC) to facilitate the resolution of complaints by Project Affected People (PAPs). The GRC will be coordinated by the Chief Resi..."		
EIA-20	EIA Report, Section 8.5.3(xix), 9.7 (Item 19) Labour Influx and Local Employment Page 8-68 to 8-71, 9-36 to 9-39 Local Employment and Skilled Labor Requirements	Spec: Preference will be given to local people to work with EPC Contractor. Mostly unskilled labor force will be required from project area. Skilled workers from outside may also be employed. No fixed employment targets or percentages specified. Ambiguity: The EIA specifies preference for local labor but does not define: (1) minimum percentage of skilled vs. unskilled labor to be sourced locally, (2) whether Contractor must meet a specific local	Q19: What are the minimum targets or requirements for local employment (% of workforce to be sourced from Hunza district or local communities)? Must the Contractor meet gender participation targets for women in the workforce? Will the Contractor be required to provide vocational training to local	The maximum unskilled labor shall be acquired from Hunza district or local communities. The E[C Contractor shall maintain the record of local and non-local labor and will share the same with Employer from time to time. Yes, the EPC Contractor has to meet gender participation targets for

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		employment target (e.g., 70% of workforce), (3) how 'local' is defined (district, valley, province level), (4) women participation targets in employment, (5) wage equity requirements between local and non-local workers, (6) training obligations for local workers to develop skills, and (7) preference for local employment transition to O&M phase.	workers to qualify them for higher-skilled positions? What wage equity requirements apply between local and non-local workers?	women in the workforce (staff level). Yes, the EPC Contractor shall be required to provide vocational training to local workers to qualify them for higher-skilled positions. The minimum wage must be given to every worker and relevant labor laws shall be implemented.
EIA-21 NADR O- WED	EIA Report, Annex-VII (Key Performance Indicators), Table 9-4 Environmental Monitoring Frequency and Standards 9-71 to 9-75 Specific Environmental Performance Standards and KPIs	Spec: Pre-construction: baseline monitoring once for water, air, noise. Construction: quarterly monitoring. O&M: biannual monitoring. Cost for environmental monitoring and management: tentative for 3-year construction: PKR 98.49 million. Ambiguity: The EIA specifies monitoring frequencies but does not provide: (1) quantified performance thresholds or KPI targets for air, water, noise (e.g., max PM10 = 150 mg/m ³), (2) consequences if	What are the specific quantified environmental performance targets/KPIs that the Contractor must meet (e.g., PM10 ≤ 150 mg/m ³ , Noise ≤ 65 dB(A), TSS, BOD limits, etc.)? Are these defined in Annex-VII?	The EPC Contractor has to prepare KPIs in the site specific ESHS plans and will be subject to approval from Employer. The KPIs must be aligned with the EIA report.

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		thresholds are exceeded (daily fines, work suspension, contract termination), (3) financial penalties for non-compliance (lumpsum or per-day rates), (4) monthly reporting format and submission timelines, and (5) who validates compliance reports (MC, WAPDA, GB EPA, third party). Self-verification: Spec partially addresses this: "Annex-VII: Key Performance Indicators (KPI)"		
EIA-22	EIA Report, Section 5.2.6, 5.2.7, 8.4.2(i), Executive Summary Flooding and Natural Disaster Management Page 5-8, 5-22, 8-8 to 8-10 Glacial Lake Outburst Flood (GLOF) Risk and Climate Adaptation	Spec: GLOF events are becoming common in Hunza. Recent GLOF in Hassanabad village mentioned. Design flood = 1000- year return period. Project not expected to create major adverse impacts due to GLOF. Continuous monitoring of glaciers in Hunza region recommended. Ambiguity: The EIA acknowledges GLOF risk but does not specify: (1) Contractor's responsibility for protecting camp/structures from GLOF during	Q21: What responsibility does the Contractor have for protecting the construction camp and project assets from potential GLOF events? Will there be a glacier monitoring and early warning system in place, and who operates it? If a GLOF event damages the Contractor's camp or construction assets, who	The EPC Contractor will select the location of construction colonies and camps at sites most protected from potential GLOF events. Regional glacier monitoring and early warning will be coordinated by the Employer, while the Contractor remains responsible for precautionary measures at its facilities.

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		construction, (2) evacuation procedures if GLOF is imminent, (3) warning system and early notification protocol, (4) liability if GLOF damages camp or project assets during construction, (5) whether project design includes GLOF mitigation measures (e.g., barriers), and (6) who monitors glaciers and issues GLOF warnings.	bears the loss? Must the Contractor implement specific design measures or protocols to mitigate GLOF impact (e.g., elevated structures, evacuation routes)?	
EIA-23 NADR O- WED	EIA Report, Section 10.2 (Recommendations), Table 9-4, Executive Summary Environmental Cost Estimates and Project Budget Page 10-3, 9-71 to 9-75, Page 1 Environmental Cost Recovery and Contract Payment Linkage	Spec: Tentative cost to implement EMP: PKR 126.5 Million. Cost estimates for monitoring and management: PKR 11.79M (pre-construction), PKR 98.49M (construction), PKR 2.13M (O&M annually). 'This tentative cost will be included in the overall project cost. Cost will be reviewed and firmed before bidding. Ambiguity: The EIA states environmental costs will be included in project cost but does not specify: (1) whether environmental costs are lumpsum or cost-reimbursable, (2) payment mechanism (monthly, quarterly, or upon completion), (3) whether final monthly payments are conditional on EMP compliance	How will the PKR 126.5 Million environmental cost be incorporated into the Contract as a separate lumpsum item, proportionally allocated, or linked to environmental performance milestones?	The ESHS cost will be linked to the ESHS performance milestones as per EIA Table 9.4.

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		certification, (4) percentage of contract value that may be withheld as security for environmental non-compliance, (5) whether cost variations due to inflation or expanded scope trigger variation procedures, and (6) whether contractor retains cost risk if environmental scope expands due to regulatory changes. Self-verification: Spec partially addresses this: "The tentative cost estimates to implement EMP is estimated as PKR. 126.5 Million. This tentative cost will be included in the overall project cost.		
EIA-24	EIA Report, Section 3.11, Table 9-4, Section 9.8 Project Implementation Schedule and Monitoring Timeline Page 3-18, 9-71 to 9-75, 9-57 to 9-60 Construction Schedule vs. Environmental	Spec: Project implementation schedule: 36 months construction period (estimated). Monitoring costs estimated for '3-year construction period' in Table 9-4. Environmental monitoring will continue during O&M phase. Ambiguity: The EIA assumes a 36-month construction timeline, but does not specify: (1) whether the contract duration is fixed at 36 months or variable, (2) if construction extends beyond 36 months, do	Q23: If the construction period extends beyond the estimated 36 months (due to delays, natural disasters, or scope changes), are environmental monitoring and management costs for the extended period the responsibility of the Contractor or the Employer?	The matters related to Extension of Time Will be Dealt in accordance with Sub-Clause 8.5 (Extension of Time), Part B Special Provisions, of Particular Conditions, Volume-I, RFP/EPC Bidding Document.

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	Compliance Monitoring Periods	environmental monitoring and management costs continue or are they capped, (3) responsibility if delays prevent completion within 36 months (extensions of time impact on EMP duration), (4) whether O&M phase monitoring begins upon handover or after Defects Liability Period (DLP), and (5) cost allocation if construction is extended due to environmental remediation.	environmental monitoring obligations capped at 3 years, or do they extend for the actual construction period plus DLP? Will the Contractor be entitled to extensions of time and cost recovery if environmental remediation activities cause construction delays?	

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1.	2026-03-11 Volume-I, Package-III Final (With Remote Ends) (1) Page-I	rejection of bids / Proposals, Performance Guarantee etc. are available only for registered Bidders / Proposers on EPADs at (www.vendors.epads.gov.pk) 4. The electronic Bids / Proposals, prepared in accordance with the instructions provided in the Proposal / Bidding Document, shall be submitted using EPADs on or before May 14, 2026 at 1100 hrs. Manual submission of bids/proposals is not allowed and shall not be accepted. 5. The Technical Part of Electronic Bids / Proposals on EPADS shall be opened the same day at 1130 hrs in WAPDA Auditorium, WAPDA House, Sharah-e-Quaid-e-Azam	To ensure the bid proposal is as comprehensive as possible, we are requesting an extension of the bid submission deadline. Would you agree to this?	The matter of Proposal submission deadline has already been addressed and incorporated in the upcoming Addendum No.01 TO RFP/EPC Bidding Document shall be issued on EPADS V2.0 in due course of time. The Proposers are advised to comply with the revised provisions as set forth therein.
2.	2026-03-11 PKG III Specific Provisions (with remote ends) Page 1-1	SECTION 1 SCOPE OF WORK	The bidding documents do not specify the design requirements for the fire protection water supply, plumbing for restrooms, ventilation, air conditioning, and heating systems, or lighting in the main powerhouse of the hydroelectric power plant. Please clarify whether the	The scope of works is already included in Package-I (Civil and Auxiliary Services Works).

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			scope of this bid includes the design, supply, and installation of the aforementioned systems.	
3.	2026-03-11 PKG III Specific Provisions (with remote ends) Page 1-5	1.2.1.6 “132KV Line End Bays at Remote End” : The Equipment includes but is not limited to the following. - Two (02) complete 132kV AIS Line End Bays including extension and integration with the existing 132kV busbar, protection, control, grounding, and SCADA systems at 132/66 kV Aliabad Regional Grid Station, complete in all respects. 132kV remote end line bays shall be arranged in a Single Bus Bar Scheme. - LV cables and integration with existing system. - Extension of Lighting system (if required). - Cable trays, conduits and accessories. - Construction of fence, its lighting and grounding. - Any other item which is not included here but is necessary for the safe, reliable and Integrated operation of the Line End Bays as advised by the Employer. - Construction of all associated civil facilities (equipment foundations, cable trenches, backfilling, drainage system, gravel etc.	Is it necessary to expand two 132 kV AIS bay connections within the 132/66 kV Aliabad Regional Grid Station? This includes the expansion and integration of electrical equipment, busbars, protection, control, earthing, and SCADA (Supervisory Control and Data Acquisition) systems required for the two extended bays. (If required, please provide relevant documents such as the single-line diagram for the	The scope of Remote End Line Bays including Civil works at 132/66 kV Aliabad Regional Grid Station shall be deleted from Package-III. In this regard, an upcoming Addendum No.01 TO RFP/EPC Bidding Document shall be issued on EPADS V2.0 in due course of time.

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			132 kV side and the layout drawing of the 132/66 kV Aliabad Regional Grid Station.)	
4.			Please specify the point of measurement for electricity consumption: is it at the generator outlet or the switchyard outlet?	The Tariff metering shall be installed at the 132 kV Switchyard side (Grid Interface) of the Generator Step-Up Transformer within the 132 kV switchyard.
5.			Please specify the scope of welding work for the short pipe connecting the pressure steel pipe to the upstream side of the turbine inlet butterfly valve.	It will be finalized and provided by the Proposer during detailed design phase
6.			Please provide principal diagrams of the cooling water system, drainage system, dewatering system, turbine oil	It will be finalized and provided by the Proposer during detailed design phase

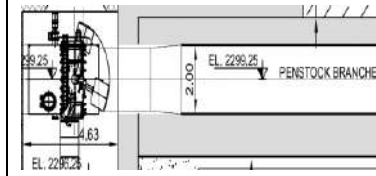
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			operating system, and compressed air system.	
7.	2026-03-11 PKG III Specific Provisions (with remote ends) Page 1-6	1.3.1 Detailed Design All Designs shall be performed in accordance with the requirements given in the following Section 2, Basic Design Criteria. The Design responsibilities of the Contractor shall be as follows but shall not be limited to: a. The Contractor shall carry out the Detailed Design and prepare Construction Drawings of the Permanent Works to be performed under this Contract, including all required site investigations, surveys and analysis deemed necessary for detailing the design. These analyses shall include, but shall not be limited to the analysis listed below. • Stability Analysis; • Head Loss Calculations of complete waterways and Turbine setting to minimum Tailwater Level; • Annual Energy Calculations (in tabulated form) considering Average Daily Flows and Actual Plant Efficiencies; • Using Computer Simulation Modelling, carry out Hydraulic Transient Analysis to determine speed & pressure rise values and flywheel effect (GD²) keeping in mind that the Power Plant will be required to stably operate in isolated mode; • The hydraulic complete design shall be vetted by the Turbine's Manufacturer; • Structural Design Calculations and Drawings of Hydraulic Steel Structures (HSS) including Gates, Stoplogs, Trash rack along with their Service / Support Structures; • Detailed Piping and Instrumentation Diagrams (P&ID) for the Mechanical Auxiliary Systems along with System Description, Design Data, Calculations and Design Briefs.	Are there any regulations regarding software used for Hydraulic Transient Analysis?	HTA shall be carried out using a well-reputed International and Industry-accepted software to ensure the accuracy and credibility of the analysis.

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8.	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 1-2	1.1.4 Key Technical Parameters of Turbines Table 1-2: Parameters <table><tr><th>Description</th><th>Unit</th><th>Quantity</th></tr><tr><td>No of Units</td><td>no.</td><td>3</td></tr><tr><td>Type of Turbine</td><td>type</td><td>Vertical Shaft Francis Turbines</td></tr><tr><td>Rated Turbine Output at Shaft</td><td>MW</td><td>18.94</td></tr><tr><td>Rated Net Head</td><td>m</td><td>104.0</td></tr><tr><td>Rated Turbine Speed (n)</td><td>rpm</td><td>375</td></tr><tr><td>Turbine Runaway Speed (n_r)</td><td>rpm</td><td>655</td></tr><tr><td>Unit Discharge (Q_{unit})</td><td>m³/sec</td><td>20.0</td></tr><tr><td>Runner Diameter</td><td>m</td><td>1.68</td></tr><tr><td>Min. Turbine Efficiency (η)</td><td>%</td><td>93</td></tr></table>	Description	Unit	Quantity	No of Units	no.	3	Type of Turbine	type	Vertical Shaft Francis Turbines	Rated Turbine Output at Shaft	MW	18.94	Rated Net Head	m	104.0	Rated Turbine Speed (n)	rpm	375	Turbine Runaway Speed (n _r)	rpm	655	Unit Discharge (Q _{unit})	m ³ /sec	20.0	Runner Diameter	m	1.68	Min. Turbine Efficiency (η)	%	93	There is no such thing as a “minimum efficiency” for water turbines. Please clarify if it refers to “the minimum value required for the turbine rated efficiency is 93%”	The minimum turbine efficiency means that rated efficiency shall not less than 93% for Guarantee purpose and to comply the requirement of Proposal.
Description	Unit	Quantity																																
No of Units	no.	3																																
Type of Turbine	type	Vertical Shaft Francis Turbines																																
Rated Turbine Output at Shaft	MW	18.94																																
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9.	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 1-30	1.3TURBINE MAIN INLET VALVES (MIV) This specifies the requirements for design, engineering, manufacture, transport, storage, erection, shop and site testing and commissioning and spare parts of three (3) inlet valves of butterfly type and their auxiliaries to be furnished for the Francis turbines.	The inlet diameter of the turbine spiral case is approximately 2.15 m. Please confirm that the selected inlet butterfly valve will have the same diameter. If not, a reducer will be required, which will necessitate increasing the width of the plant building.	As per Conceptual drawing No. ALHPP-PH-0806, it has been clearly shown that branch pipe penstock diameter is 2.0 m and it is going to 1.8 m valve through reducer																														

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		The scope of supply for each inlet valve shall include the following: –Butterfly Valve (Internal Diameter 1.8m)		
10.	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 1-49	1.5.3.2 Description Two compressed air systems shall be provided in the powerhouse: a) A high-pressure system to charge the oil accumulators of the governors (the design pressure of the high-pressure system shall be at least 130% of the maximum operating oil pressure of the oil/air accumulators of the governors). b) A low pressure compressed air system (10 bar) shall be provided in the powerhouse for air supply to the following: - to operate the mechanical generator brakes; - to provide service air to required points in the Powerhouse and Transformer Deck	It is recommended to eliminate the high-pressure compressed air system and instead use a 16 MPa high-pressure nitrogen accumulator to store energy for the governor and inlet valve.	A high-pressure nitrogen accumulator option has already been provided in the RFP/EPC Bidding Document.
11.	2026-03-11 PKG III Technical Provisions (With Remote	3.1.14 Fire Protection System Generators shall be provided with a fire extinguishing system of inert gas and water spray type.	Please specify the fire extinguishing's method for the generator.	The Generator Fire Protection system shall comply with NFPA 851 requirements and relevant NFPA standards. The inert gas CO2 is proposed (It shall be added in Addendum-I), fire detection

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	Ends)) Page 3-6			sensor type and system operation shall be finalized during the detailed design stage. A multi-criteria fire detection system. Both automatic and manual activation with safety interlocks shall be provided. The final specification and system philosophy shall be finalized during the detailed design stage subject to approval by the Employer.
12.	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 6-1	Section 6 132kV Switching Station and 132kV Line Terminal Cubicle 6.1 Scope of Work A 14.5 km long 132kV double-circuit transmission line shall be planned	Whether the construction of a new 132kV transmission line is included in this project? If confirmed, is the design length of the line 14.5 km? Shall the line transmission capacity be designed and checked against the	The construction of the new 132 kV transmission line is not part of the Package-III: Electro-Mechanical Works. It is included under the scope of Package-II 132 kV Transmission Line Works.

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			54MW installed capacity of the hydropower station? Given that the current-carrying capacity of a single circuit already meets the 54MW transmission requirement, shall a single- circuit or double-circuit configuration be finally adopted?	
—	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 6-1	SECTION 6, SCOPE OF WORK: "The 132 kV Line End Bays to be constructed at 132/66 kV Aliabad Regional Grid Station shall be fully compatible with the existing switchyard configuration, busbar arrangement, protection and control schemes, SCADA system..."	Please provide the current protection manufacturer, communication gateway model, and version for the remote substation. It is necessary to confirm whether the newly supplied protection equipment can achieve differential protection cross-switching with the existing station, and whether the	The scope of Remote End Line Bays including Civil works (132/66 kV Aliabad Regional Grid Station) shall be deleted from Package-III. In this regard, an upcoming Addendum No.01 TO RFP/EPC Bidding Document shall be issued on EPADS V2.0 in due course of time.

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			communication protocol can seamlessly integrate with the original monitoring system of the old station.	
—	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 3-48	SECTION 3, DC AND UPS SYSTEM	Is a dual-battery dual-charger configuration (two battery banks + two charging units) mandatory for DC systems? Additionally, does the UPS system for this project have specific backup time requirements (e.g., 2 hours or 4 hours)?	Regarding dual battery banks + dual charging units, please follow the requirements as specified in the RFP/EPC Bidding Document.
—	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 5	SECTION 5, Fiber Optic Link: Cable Installation & Joint	Please clarify whether the terminal junction box for OPGW entering the central control room is provided by this tender section or the line section. Where exactly is the boundary between the design and construction	The provision of Junction/Joint box shall not be the part of this Package.

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			phases for optical cable communication between both parties?	
13.	2026-03-11 PKG III Technical Provisions (With Remote Ends) HSS Page 2-1~2-4	2.2 POWER TUNNEL INTAKE Two (02) hydraulic hoisting systems comprising of hydraulic servomotors with connecting rods, hydraulic power unit, gate dogging mechanism necessary for maintenance and service, interconnecting pipes, control panels etc.;	The gate shall be operated and controlled by hydraulic hoist. The lifting/lowering speed of the hydraulic cylinder is not specified in the document. Shall it be determined by the Bidder at its own discretion? Please provide the requirement if any.	Yes, it will be provided by the Proposer.
15.	Page 2-4	2.2.2 Stoplogs	The pressure equalization method for the stoplog gate is not specified. Shall the pressure equalization by filling water through a filling valve or a bypass valve be determined by the Bidder at its own discretion?	Yes, It will be provided by the Proposer.

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16.	Page 2-7	2.2.4. Moving Gantry Cranes Main Data	Please Provide a single line drawing showing the turning points and turning radii of the curved rails for the mobile gantry crane	It Will be finalized at detailed design stage by the EPC Contractor,
17.	Page 2-9	2.2.4.4.6 Drums “ Double layer of rope winding shall not be allowed when the hook is at highest position.”	The lifting height of the gantry crane is 52 m, which falls into the category of high lifting height. If the steel wire rope is arranged in single layer winding on the drum, it will inevitably result in an excessively large drum diameter and length. Therefore, we propose adopting no more than 3 layers of winding together with a polygonal rope groove drum design to avoid rope entanglement. Please confirm whether this proposal is acceptable.	it will be finalized during detailed design phase by the Contractor or Manufacturer.

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18.	Page 2-14_2-17	Equipment to be furnished at the flushing intake: 1、 One flushing intake service gate (vertical lift fixed wheel type) 2、 One guard gate (fixed wheel type) “The intake of flushing tunnel shall be provided with one (01) guard gate at upstream of service gate for maintenance. The gate shall also be capable to close under unbalanced water condition under its own weight in case service gate stuck due to some problem” 3、 One set of stoplogs required for removal of rock plug (optional)	1 、 According to the drawing “ALHPP- HSS-0402”, the frame of the hydraulic cylinder is arranged below the maximum water level of El. 2421.00 m. Is a tight water seal required between the frame and the top of the gate slot? Please clarify. 2、 Due to the high design head of the emergency gate, it shall be closed under flowing water and opened under still water. The gate is expected to be closed by means of water column, and opened after pressure equalization through the water filling valve. Closing by water column will result in a relatively large holding	1. Yes, your understanding is correct. The Tight seal is required to stop the water to the water level 2. Yes, your understanding is correct. It will be finalized during detailed design phase 3. it will be finalized during detailed design phase

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			force, which leads to a higher lifting capacity requirement for the mobile gantry crane. Therefore, the capacity of the gantry crane shall be determined based on this holding force. Please confirm whether this understanding is correct. 3、 It is proposed that a set of stoplog gates may not be required.	
19.	PROCEDURES AND CONDITIONS OF CONTRACT of book 1 Page 4-12	Note 3: the Proposer shall quote/ include the price of FAT (Factory Acceptance Tests) in the above Price Schedules 1 & 2.	In Schedule 1&2, a total of 26 items are listed, each of which includes several sub- equipment. The bidding document requires the bid price to include FAT costs. Please clarify: 1. Which specific equipment	Please follow the requirements of RFP/EPC Bidding Document Volume-II, Part-I, Specific provisions.

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			components of the equipment's require FAT? 2. The exact information regarding the number of representatives attending FAT, subsidy amounts, air ticket class, and accommodation standards?	
20.	Procedure for Delay Damages for Interface Milestones book 1 page 8-9, 8-10, 8-11, 8-12	Procedure for Delay Damages for Interface Milestones and its table -1 and table -2	The bidding document only specifies penalties and rules related to delays in the interface between E&M and civil works, as well as overall schedule delays, but includes no exemption clauses. It is clear that hydropower project site construction can be affected by many factors beyond civil and E&M work, such as adverse weather conditions, security	Issues related to Delay Damages will be dealt in accordance with Sub-clause 8.8 (Delay Damages) of Section VII General Conditions, Volume-I RFP/EPC Bidding Document and Part A Contract Data and Part-B Special Provisions, Section VIII Particular Conditions, Volume-I RFP/EPC Bidding Document.

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Pre-Proposal Clarifications CD- ALHPP RFP/EPC Bidding Document of Package-III: Electro-Mechanical Works				
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			situations and requirements by army or Pakistan government, local social factors, or prior breaches by the owner. However, no relevant exemption clauses are found in the bidding document. Please clarify.	
21.	2026-03-11 PKG III Specific Provisions (with remote ends) Page 1-2	1.1.1 Civil Works for 132kV Line End Bays at Remote End	This description only covers the civil engineering work required; please provide a bill of quantities for the civil engineering work and the relevant drawings.	The scope of Remote End Line Bays including Civil works at 132/66kV Aliabad Regional Grid Station shall be deleted from Package-III. In this regard, an upcoming Addendum No.01 TO RFP/EPC Bidding Document shall be issued on EPADS V2.0 in due course of time.

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22.	2026-03-11 PKG III Technical Provisions (With Remote Ends)	Section 1.1.2, 3.1.3, 4.2 All equipment conform to IEC / IEEE / ASME / DIN / FEM.	Do you agree to adopt GB/T Chinese national standards or ISO equivalent standards? Please clarify.	As per the requirements of RFP/EPC Bidding Document, only International Standards will be adopted for this Project.
23.	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 1-2	1.1.5 Life of Plant, Maintenance Cycles and Reliability The Plant shall be designed for a service life of not less than fifty (50) years, considering daily start-ups and shutdowns during operations. Maintenance on each unit will be done annually on a rotational basis. Between annual maintenance periods, the units will be expected to operate with 100% availability. The design shall be such that dismantling shall not be necessary in the first ten (10) years of operation.	Generally, water turbines require maintenance and upkeep, including Level A, B, and C overhauls, with a typical cycle of 3 to 5 years, depending on the operational status and conditions of the equipment. Standards such as DL/T 2574 and DL/T 817 provide corresponding technical procedures for equipment maintenance. Does the statement "no disassembly of equipment	The requirement does not imply that maintenance activities have been prohibited. Routine and preventive maintenance like inspections, lubrication, adjustments, replacement of consumables, and minor repairs Secondly, the design shall be proven and based on good engineering practices as per site specific conditions such that Level C maintenance (major overhaul involving

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			in the first ten years" mean that no equipment is allowed to be disassembled? Please clarify.	dismantling of main components such as runner, shaft, bearings, etc.) → shall not be required within first Ten (10) years
24.	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 1-5 ~1-6	Section 1.1.12.1 & 1.1.13 The prototype efficiency shall be taken equal to model efficiency and no scaling up shall be applied.	Is it understood that without considering the correction of real machine efficiency, the performance guarantee is based on the model efficiency guarantee and meets the requirements of the bidding documents? Please clarify.	Please fully comply the IEC 60193-2019 Standard in this regard
25.	2026-03-11 PKG III Technical Provisions (With Remote	1.1.21.1 Assembly and Tests in The Workshop Shop assembly shall comprise the whole turbine including pit lining, manifold, runner, complete operating mechanism, etc.	Is it necessary to require the entire hydroelectric turbine unit to be pre-assembled in the manufacturing plant? Generally, it is pre-assembled in the plant in parts. Please clarify.	A Separate testing will be carried out in Manufacturer Workshop

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26.	2026-03-11 PKG III Technical Provisions (With Remote Ends) Page 1-21	1.1.21.1 Assembly and Tests in The Workshop Hydrostatic pressure testing shall be performed on the spiral case. Welding seams of the manifold shall be tested 100% ultrasonically. In addition, 100% of these welds including all intersection points shall be tested radiographically.	Here is a requirement for all welds on the spiral case to undergo ultrasonic and radiographic inspection Can it be changed to: The weld seam of the spiral case undergoes 100% ultrasonic flaw detection, and radiographic flaw detection is used for verification in areas where multiple flaw detection methods yield suspicious results. Please clarify.	Please follow the requirement as per RFP/EPC Bidding Document.
27.	2026-03-11 PKG III Technical Provisions (With Remote	Table 3-5: Spare Parts and Tools All necessary tools required for complete maintenance	The bidding documents do not specify specific requirements or provide a list of tools specifically for hydro-generator units. Please provide a detailed list of specialized tools or clarify whether	The special tools details shall be finalized during detailed design stage. For standards, please follow the RFP/EPC Bidding Document requirements as specified.

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	Ends) Page 3- 10		corresponding specialized tools can be provided in accordance with GB/T standards.	