

**Amendment-X dated 22.12.2025 to RFP documents for Selection of Bidder as Transmission Service Provider to establish Inter-State Transmission system for “Transmission system for evacuation of power from Shongtong Karcham HEP (450 MW) and Tidong HEP (150 MW)” through tariff based competitive bidding process**

Sl. No	Clause No.	Existing Clause	New/Revised Clause
1.	<p>SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION</p> <p>A. Phase-I with Tidong HEP</p> <p>2. Establishment of 400/220 kV GIS Pooling Station at Jhangi</p>	<p>v. <u>TSP shall supply, install &amp; commission Firewall in redundant mode (1+1) in line with the specification attached at Annexure F.1.</u></p>	<p>v. <u>TSP shall deploy Cyber Security System in compliance with CEA (Cyber Security in Power Sector) Guidelines, 2021 and CEA (Cyber Security in Power Sector) Regulation, from its date of publication/ notification and their amendments thereof.</u></p>
2.	<p>SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION</p>	<p>Annexure-F.1</p> <p>Next Generation Firewall (NGFW)</p> <p>TSP shall provide 2 NGFW one in Main &amp; another in Standby mode having electrical ethernet interfaces/ports and placed between FOTE &amp; SAS gateway/s at the substation. All ethernet based applications shall be terminated in the firewall ports directly (e.g. PMU, AMR, VOIP, SAS/SCADA etc.). Each port of firewall shall work as a separate zone. Firewall shall be</p>	<p><b>Stands deleted</b></p>

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		<p>hardware based with features of Block/Allow/drop and IPSec VPN (network encryption).</p> <p>The number of ports/interfaces in each firewall (i.e. Main &amp; Standby) shall be minimum 16 nos. TSP shall provide either single firewall or multiple firewalls to meet this interfaces requirement, each for main as well as standby firewall. Minimum throughput of firewall shall be 300 Mbps.</p> <p>The Firewall shall be managed/ configured as standalone at present and shall also have compatibility to manage/configure through Centralized Management Console (CMC) remotely in future.</p> <p>Firewall shall be tested and certified for ISO15408 Common Criteria for least EAL4+. Further, the OEM must certify that it conforms to Secure Product Development Life Cycle requirements as per IEC62443-4-1. The firewall shall generate reports for NERC-CIP Compliance.</p> <p>The specifications for the firewalls are given at Annexure-F.2 and schematic diagram</p>	

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		showing firewall placement given at Figure F.2.	
3.	SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION	<p>Annexure F.2</p> <p>Specifications of Next Generation Firewall (NGFW)</p> <ol style="list-style-type: none"> <li>1. NGFW shall have following features including but not limited to: Encryption through IPSec VPN (Virtual Private Network), Deep Packet Inspection (DPI), Denial of service (DoS) &amp; Distributed Denial of Service (DDoS) prevention, Port Block/ Allow, rules/ policies for block/allow, IP (Internet Protocol) &amp; Media Access Control (MAC) spoofing protection, threat detection, Intrusion Prevention System (IPS), AntiVirus, Anti-Spyware, Man In The Middle (MITM) attack prevention.</li> <li>2. The proposed firewall shall be able to handle (alert, block or allow) unknown /unidentified applications e.g. unknown TCP &amp; UDP packets. It shall have the provision to define application control list based on application group and/or list.</li> <li>3. Firewall shall have feature and also have capability to update the definition/ Signatures of Anti-Virus online as well as offline. Firewall</li> </ol>	<b>Stands deleted</b>

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		<p>shall also be compatible to update the definitions/signatures through CMC. There shall be a defined process for security patching and firmware up-gradation. There shall be a feature to field validate firmware checksum. The same shall also be validated before using the OEM provided file/binary in the process of firmware up-gradation and security patching</p> <ol style="list-style-type: none"> <li>4. Firewall shall have Management Console port to configure remotely.</li> <li>5. Firewall shall be EMI/EMC compliant in Substation environment as per IEC 61850-3.</li> <li>6. Firewall shall be rack mounted in existing standard equipment cabinets.</li> <li>7. Firewall shall have support of SCADA applications (IEC-60870-5-104), ICCP, PMU (IEEE C37.118), Sub-Station Automation System (IEC 61850), Ethernet and other substation environment protocols.</li> <li>8. Client based Encryption/ VPN must support different Operating System platforms e.g. Windows, Linux &amp; Mac.</li> <li>9. The solution must have content and comprehensive file detection policies, blocking the files as function of their types, protocols and directions.</li> </ol>	

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		<p>10. Firewall shall have logging facility as per standard logs/events format. Firewall shall have features to export the generated/stored logs/events in csv (Comma Separated Value) and also any other standard formats for offline usage, analysis and compliance. Firewall shall have suitable memory architecture and solution to store and be enable to export all logs/events for a period of last 90 days at any given time.</p> <p>11. Firewall shall have features and be compatible with local as well as central authentication system (RADIUS, LDAP, or TACACS+) for user account and access right management. It shall also have Role Based User management feature.</p> <p>12. Firewall shall have the capability to configure sufficient number of VLANs.</p> <p>13. Firewall shall have the capability to support sufficient number of sessions.</p> <p>14. Firewall shall have provision to configure multiple IP Sec VPNs, at least 100 nos., (oneto-many or many-to-one). Shall support redundant operation with a similar router after creation of all the IP Sec VPN. IPSec VPN shall support encryption protocols as AES128, AES256 and hashing algorithms as</p>	

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		<p>MD5 and SHA1. IPSec VPN throughput shall support at least 300 Mbps</p> <p>15. Firewall shall be capable of SNMP v3 for monitoring from Network Management system. It shall also have SNMPv3 encrypted authentication and access security</p> <p>16. Firewall shall support in Active/Passive or Active-Active mode with High Availability features like load balancing, failover for firewall and IPsec VPN without losing the session connectivity.</p> <p>17. Firewall should have integrated traffic shaping (bandwidth, allocation, prioritisation, etc.) functionality</p> <p>18. Shall support simultaneous operation with both IPv4 and IPv6 traffic</p> <p>19. Firewall shall be compatible with SNTP/NTP or any other standards for clock synchronization</p> <p>20. Firewall shall have the features of port as well as MAC based security</p> <p>21. Firewall shall support exporting of logs to a centralized log management system (e.g. syslog) for security event and information management.</p> <p>22. Firewall time shall be kept synchronised to official Indian Timekeeping agency, time.nplindia.org.</p>	

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		23. Firewall product shall be provided with all applicable updates at least until 36 months since the applicable date of product shipping to the concerned utility.	
4.	SPECIFIC TECHNICAL REQUIREMENTS FOR COMMUNICATION	<p><b>Firewall Placement Diagram</b></p> <p><b>Figure F.2</b></p>	Stands deleted