



Plant 1.0 MTPA ALUMINA REFINERY	Client NALCO		Contract Code NAL	Document ID 6695-PPM-0004	Contract No. 66-6695		
thyssenkrupp Industrial Solutions (India)	PROPOSAL FORMS (220kV SWITCHYARD & ASSOCIATED FACILITIES)				Rev 00  नेशनल एल्युमिनियम कंपनी लिमिटेड National Aluminium Company Ltd.		
NAME OF WORK: Detailed Engineering, Project Management, Total Procurement, Fabrication, Manufacturing, Quality Assurance, Inspection & Expediting, Third Party Inspection, Supplies, Transportation, Handling & Storage of all Equipment, Materials, items and other Construction Materials, Construction Management & Supervision, Assembly & Erection, Construction and Installation, Installation of Tie-in points of Piping, Instrumentation, Electrical, Testing, Insulation, Painting, Obtaining all Statutory Approvals (except Environment Clearance which has been obtained by NALCO), Pre-commissioning & Mechanical Completion, Start-up, Commissioning and Performance Guarantee Test Runs of 220kV Switchyard & Associated Facilities Package including spares with Final and "As Built" documentation to NALCO on single point responsibility basis (Lump Sum Turn Key –LSTK- Basis), based on tender documents provided by tKIS India, for 1.0 MTPA ALUMINA REFINERY of M/S NATIONAL ALUMINIUM COMPANY LIMITED (NALCO) at Damanjodi, Odisha, India							
Bid Document No : 6695-CMG-G00-CA-0015							
FORMAT FOR BIDDER'S QUERIES FOR PRE BID DISCUSSION							
FORM-M							
SL. NO.	REFERENCE OF BIDDING DOCUMENT					BIDDER'S QUERY	OWNER/CONSULTANT'S REPLY
	PART / VOL.	Page No.	Document No./ Description	Clause No.	Subject		
1					220KV SWYD. EQP. LAYOUT	As per drawing, it is understood that STP Building, STP TANK, SUMP are existing on proposed 220kV switchyard area. Please clarify whether plain levelled land will be handed over to LSTK contractor or demolition of same is in LSTK contractor's scope of work. Please confirm.	Demolition of the mentioned facilities is not part of Bidder's scope. Plain levelled land will be handed over to LSTK Contractor. Refer Clause 2.1.3 of Scope of Works for CSA (6695-CVC-526-CA-0001)
2					220KV SWYD. EQP. LAYOUT	Drawing indicates 6m wide new road on south and west side of the proposed 220kV switchyard area. Since this is outside the fence area of switchyard, we understand that this is excluded from LSTK contractor's scope of work. Please confirm.	Unit Roads are part of Contractor's scope of works. Please refer Clause 2.2.30 of 2.6.3_6695-CVC-526-CA-0001_00(Scope of Work for CSA)
3					220KV SWYD. EQP. LAYOUT	Refer to Section -DD, some structural support arrangement for 220kV cable from existing Main Bus-1 is shown. Please confirm mode of laying (directly buried or over-head with structural support) for this 220kV cable for entire route. In case of O/H arrangement, please provide typical cross-section of cable support indicating height.	Bidder to refer to Clause 5.3 of the document Scope of Work for Contractor - Electrical
4					Key SLD	As understood from key SLD, for US-501 to 508 (8nos), LSTK contractor have NO scope of work regarding power distribution within US. Please confirm.	Bidder to refer to Clause 3.5 of the document Battery Limit & Interfaces - Electrical, Key SLD & SLD for 220kV switchyard
5					Key SLD	Please confirm make and model of existing 11kV switchboard in CDS.	Drawings of the existing 11kV switchgear shall be provided in Addendum
6					Key SLD & SLD for 220kV switchyard and New 11kV Switchgear building	Please confirm 11kV Bus rating (double bus) of existing 11kV switchboard in CDS. STC and current rating are not matching.	Drawings of the existing 11kV switchgear shall be provided in Addendum
7					SLD for 220kV switchyard and New 11kV Switchgear building	As understood from SLD, all power (HT, LT), control cables and interfaing cable with New 11kV switchboard (including termination) related to STG-1 & 2 (along with it's associated Transformer) shall be supplied and terminated by others. Please confirm.	Confirmed
8					SLD for 220kV switchyard and New 11kV Switchgear building	As understood from SLD, all power (HT, LT) and control cables (including termination) related to 11kV "Aux & Utility of SPP" feeder (2 nos) are excluded from present LSTK package. Please confirm.	Confirmed
9					SLD for 220kV switchyard and New 11kV Switchgear building	As understood from SLD, 11kV cable (including termination at both end) scope of work under present LSTK package is as follows. Please confirm pointwise. (A) 11kV extension feeder at CDS To 11kV New switchgear at Building 500 (2 Feeders) (B) TR-1106/07 secondary side at switchyard To 11kV New switchgear at new Building 500 (2 Feeders) (C) 11kV New switchgear at Building 500 To TR-2104/5M (2 Feeders) (D) 11kV New switchgear at Building 500 To US-501 to 508 (8 x 2 =16 Feeders)	Bidder to refer Battery Limit & Interfaces - Electrical, Key SLD & SLD for 220kV switchyard
10					SLD for 220kV switchyard and New 11kV Switchgear building	We understand that 33kV cable (including termination at both end) between TR-2104/5M secondary side To 33kV ICOG panel at Building 500 (2 Feeders) are in present LSTK scope of work. However outgoing cable from 33kV ICOG panel is not in present LSTK scope of work. Please confirm.	Confirmed
11					Soil Inverigation Report & Earthing	It's found that location of ERT-1/2/3/4/5/6 is very far away from proposed 220kV switchyard. So, our proposal is to extend the main earthmat available in adjacent existing 220kV substation with same spacing for the new proposed switchyard. Please confirm.	Refer ERT 11 and ERT 13 of 4.5.2.1_6695-CVC-G00-DD-0001_Part B for the relevant information.
12					Soil Inverigation Report & Earthing	Earthing scope under present LSTK package is limited to only (1) 220kV proposed switchyard (fence area), (2) New 11kV Switchgear Building (500) (3) New Cable Route. Please confirm.	Bidders understanding is not correct. Earthing of all facilities within LSTK package battery limit shall be in Bidders scope. Bidder to refer clause 5.3.9 of the document Scope of Work for Contractor - Electrical
13					Soil Inverigation Report & Earthing	NO earthing to be considered for US (501 to 508) building, under present LSTK package. SCADA system earthing in US (501 to 508) building shall be done by others. Please confirm.	Confirmed. However Bidder to refer to clause 6.6 of the document Scope of Work for Contractor - Electrical for specific requirements for SCADA earthing


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14			Provision of Earthing grid for ISBL plant and its connection to overall plant earthing grid and existing switchyard earthing grid at a number of locations to be decided during detailed engineering.	This Scope of work not clear. Please clarify the requirement.	Bidder to refer clause 5.3.9 of the document Scope of Work-Contractor for connection of earthing grid with Owners main plant earth grid.
15			Lightning Protection-Switchyard	Lightning Mast (LM) - Rezigv method shall be used for DSLP for proposed 220kV switchyard area, instead of EGM (Rollinh Sphere) Method. Note that Lightning Mast (LM) - Rezigv method is acceptable to OPTCL/Nalco and same is followed in existing adjacent 220kV switchyard. Please confirm.	Bidders proposal accepted.
16			Lightning Protection-Cable Routing	No Lightning Protection to be considered for any cable route support structure (New/existing pipe rack) & US building (501 to 508) under present LSTK package. Please confirm.	Bidders understanding is correct. However earthing of cable route support structure shall be in Bidders scope
17			Illumination System	Illumination scope under present LSTK package is limited to only (1) 220kV proposed switchyard (within fence area), (2) New 11kV Switchgear Building (500) including connecting covered walkway with CDS, (3)Extension part of existing CRP room and cable cellar at CDS. Please confirm.	Lighting within LSTK package battery limits is in Bidders scope.
18			Illumination System	No illumination to be considered for any cable route (New/existing pipe rack) & US (501 to 508) under present LSTK package. Please confirm.	Bidders understanding is correct
19			Illumination System	LM in proposed 220kV switchyard shall also be used for illumination of proposed 220kV switchyard area. Please confirm.	Bidders understanding is correct.Bidder to refer to Clause 4.0 of the document Scope of work for Contractor - Electrical
20			Illumination System	Street lighting outside of 220kV proposed switchyard is NOT in present LSTK scope of work. Please confirm.	Lighting within LSTK package battery limits is in Bidders scope. Refer clarification given in Sr.no. 2 above
21			Overall Plot plan & pipe rack	Please provide us the typical section of new pipe rack support for cable routing, typical road crossing of new pipe rack (below ground form & above ground form) , existing pipe rack sectional details etc. for our estimation purpose.	Bidder to conduct site survey for acquiring sectional details of existing piperack. Details of new piperack routing marked in red colour on the overall plot plan shall be provided in Addendum
22			Overall Plot plan & pipe rack	Whether all new pipe rack routing as shown in overall plot plan is under present LSTK scope of work? Please confirm	New Pipe rack routing i.e foundation, footings & structure marked in red colour on overall plot plan is not in the scope of this package. However cable tray supports & cable trays on this new piperack is in Bidders scope. Refer to clause 5.3.4 of the document Scope of work for Contractor - Electrical
23			"Scope of work for Contractor-Electrical" - Tapping power from existing Switchboard in CDS to Aux. DB in New 11kV Switchgear building	Whether existing vacant compartment/channel can be used here (if available) or only new vertical panels shall be provided by LSTK contractor for new feeder requirement. Please confirm acceptance.	Bidder to consider new vertical panels.
24			"Scope of work for Contractor-Electrical" - Tapping power from existing Switchboard in CDS to Aux. DB in New 11kV Switchgear building	Please provide existing Equipment layout in CDS for source panel location identification.	Bidder to refer to the documents of Existing facilities available in Volume 5 of the tender document
25			"Scope of work for Contractor-Electrical" - Tapping power from existing Switchboard in CDS to Aux. DB in New 11kV Switchgear building	Please provide existing Cable Cellar layout in CDS also for existing cable route	Bidder to estimate based on site conditions.
26			Furniture	Scope of supply for Furniture/cabinet is applicable only to 11kV New switchgear at Building 500. Please confirm	Scope is applicable to 8nos. Unit substations also as per Clause 6.3 of the document Scope of Work for Contractor - Electrical.
27			FA & PA system	FA & PA system scope is limited only to 11kV New switchgear at Building (500) and it's hook-up with central system of 5th stream AI refinery at central control room. Please confirm. Also provide location of central control room above or distance from 11kV New switchgear at Building (500).	FA for switchyard & extension of CRP room, Fire fighting system for transformers shall also be in Bidders scope. Bidder to refer to Overall plot plan for the location of Central control room

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28			FA & PA system	PA and FA system at central control room above shall be in customer's scope and not a part of this substation package. Please confirm.	Bidders understanding is correct
29			Relocation of existing LDB in cable cellar room for new RTCC panel in existing CRP room	Whether LSTK contractor to replace all cables associated with existing LDBs (to different existing loads) for this shifting? Please clarify	Bidder to follow Clause 5.3.5 of the document Scope of Work for Contractor - Electrical Bidder to conduct site survey for any further information required
30			SLD / Scope of Works - Electrical	SLD Signifies that 220kV cables are in Customer's scope whereas elsewhere in scope of works it is indicated that 220kV cables are in bidder's scope. Please confirm the scope of 220kV Cables and 220kV Cable Termination Kits	SLD & Scope of work document clearly indicates that 220kV cable alongwith both sides termination is in Bidders scope.
31			SLD / Scope of Works - Electrical	In the event, 220kV Cables and 220kV Cable Termination Kits are in bidder's scope of works, kindly provide the sizes of the cable to be considered; cable termination size will be arrived accordingly.	Bidder to refer Clause 5.3 of the document Scope of Work for Contractor regarding the sizing of 220kV cable. Bidder to size the 220kV cable accordingly.
32			SLD / Scope of Works - Electrical	Please confirm the requirement of bonding cables and SVL- with/ without link boxes as there is no mention of the same.	Bidder to refer to the technical specification of EHV cable. Requirement & type of sheath bonding shall be decided by Bidder in consultation with cable manufacturer.
33			Scope of Works - Electrical	Please confirm that 11kV cable from secondary of 220/11kV Transformers in 220kV switchyard to 11kV switchgear in new 11kV switchgear building (500) shall be through cable trench/ OH cable rack. Also confirm if the same is available or needs to be constructed under the present tender scope.	Bidder to refer Clause 5.3.3 of the document Scope of Work for Contractor.
34			Scope of Works - Electrical	11kV cables from 11kV switchgear in new 11kV switchgear building 500 to 11kV switchgear in 8Nos. of unit substations of 5th stream Alumina Refinery including line differential relays 87L at either ends- We request the customer to kindly provide the route survey for the same. Kindly confirm that customer will pay/ reimburse extra for any change in route/ layout/ type/ dimensions etc.	Site survey / cable route survey is in Bidder's scope as per the tender document Bidders request not acceptable.
35			Scope of Works - Electrical	Interconnection of new 11kV switchgear with the existing 11kV switchgear at CDS shall be through cable trench/ OH cable rack. Also confirm if the same is available or needs to be constructed under the present tender scope and provide the route plan.	Bidder to refer to clause 5.3.7 of the document Scope of Work for Contractor - Electrical Site survey / cable route survey is in Bidder's scope as per the tender document
36			Scope of Works - Electrical	Please confirm the make and model of relays/ interface with 8Nos. of unit substations of 5th stream Alumina Refinery for SCADA. Also confirm the scope of FO cabling / routing from these unit stations to the SCADA.	Bidder to refer to the probable makes of relays as per Clause 6.5 of the document Scope Of work for Contractor - Electrical Bidder to refer clause 6.0 of the document Scope of Work for Contractor - Electrical for scope of FO cabling. Bidder to refer to SCADA block diagrams available in the tender. Routing of FO cable shall follow the same route as 11kV cable
37			Scope of Works - Electrical	We understand that SCADA system shall be placed in 11kV switchgear building (500). Please confirm.	Bidder to follow Overall SCADA block diagram and other documents available in the tender.
38			Scope of Works - Electrical	We understand that the tools and tackles indicated in the tender specifications shall be provided on returnable basis during erection, testing and commissioning of the system/ substation. Kindly confirm.	Bidders understanding is incorrect. All tools & tackles shall be supplied and shall not be on returnable basis
39			Pipe/ Cable Rack	Kindly provide the complete details with elevation, section, type and route of the proposed new pipe/cable rack.	Refer to reply for Sr.No. 21 above
40			Tools & Tackles	We do not envisage the supply of Tools & Tackles for the proposed substation project as the same shall be made available during testing & pre-commissioning activities at site on returnable basis. Kindly confirm.	Bidders understanding is incorrect. All tools & tackles shall be supplied and shall not be on returnable basis
41			Training	Site training will be imparted in the site during erection, testing and commissioning of the substation to customer's officials for a period of 10 mandays. No Classroom training envisaged. Kindly confirm.	Bidders understanding is not correct. Bidder to refer clause 17 of the document Scope of Work for Contractor - Electrical.
42			Inspection/ Routine Tests	Inspection of the equipment and facility can be provided if requested well in advance and the date shall be as fixed by us. Similarly routine tests can be conducted in the presence of the purchaser's representative based on similar conditions as above without any price implications. However, The cost for to and fro travel, lodging, traveling within city, food and out of pocket expenses and all related expenses shall in total be to the purchaser's account.	Bidder to follow Inspection test plans as per tender document. Travel expenses for Owner / Consultant shall be borne by others
43			Type Tests	Type Testing of the offered equipments in our battery limits is not considered in our scope. However we will submit the type test certificate for the similar design or higher rating equipments of same voltage or higher voltage in the event if we are the successful bidder. The Type test report shall be submitted with in 10 years for Main equipments. We do not envisage to carry out or conduct any fresh type test or special test on units, hence we shall furnish TTR of the type tested design. Kindly confirm.	Bidders understanding is not correct. Bidder to follow the ITPs provided in the tender specifications.
44			Co-ordination with OPTCL/SOUTHCO/CEIG	Co-ordination with OPTCL/SOUTHCO/CEIG shall be in customer's scope. Bidder will provide technical support. Kindly confirm.	Bidders understanding is incorrect. All co-ordination activities for obtaining statutory approvals including CEA shall be in Bidders scope.


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45			Scanning of Underground Services	Kindly elaborate this scope of work.	For envisaging any underground facilities like cables, pipelines, trenches within Bidders battery limit
46			General- Conductor Sizing	Maximum conductor size is indicated for 1C of 11kV only. Kindly confirm the same for 11kV 3Core.	For 3c - max size 300mm2
47			General- Conductor Sizing	Maximum conductor size is NOT indicated for 1C and 3C of 33kV. Kindly provide/ confirm the same.	For 1c - max size 1000mm2 For 3c - max size 300mm2
48			220KV SWITCHYARD EQUIPMENT LAYOUT 6695-ELT-526-LH-0001, R2	Please provide the length of 220KV cable which shall be used for connecting Main Bus-1 to Bay-1.	Bidder to estimate the cable length based on site survey & various documents of tender.
49	Page 16 of 32		CI no 5.4 (q) of 6695-ELT-526-CA-0002, R1	As the proposed 220 KV switchyard extension is adjacent to the existing switchyard, can we extend the existing earthmat for the extension bays.	Bidder to design separate earthing grid for the new switchyard bays as per clause 4.0 of the document Scope of Work for Contractor - Electrical
50	Page 16 of 32		CI no 5.4 (q) of 6695-ELT-526-CA-0002, R1	As the proposed 220 KV switchyard extension is adjacent to the existing switchyard, can we use the existing lightning protection calculation for the proposed switchyard. If yes, please provide the the calculation.	Bidder to design separate lightning protection for the new switchyard bays as per clause 4.0 of the document Scope of Work for Contractor - Electrical
51	Page 7 of 32		CI no 5.1 of 6695-ELT-526-CA-0002, R1	Please provide the details and location of 33kV ICOG panels.	Bidder to refer to the SLD & Substation arrangement layout for New 11kV switchgear building available in the tender
52			SUB VENDOR LIST 6695-PPM-526-BA-0001	We request your to include/ add Prime Meiden as approved make for transformer.	Bidder to follow the approved vendor list available in the tender document
53			General Electrical	Please provide the Autocad drawing of 220KV switchyard equipment layout and overall plant layout.	Autocad drawing shall be provided in Addendum
54			General Electrical	As the scope of works includes extension of existing 220 kV Switchyard, we request to kindly provide the Layout, SLD of existing Switchyard along with the details of existing makes of Equipment installed in Switchyard.	Bidder to refer to the documents of Existing facilities available in Volume 5 of the tender document
55				Do we need to consider Lattice Structure for Towers and Beam ?	As required by Bidders design requirements.
56				Is there any piling work below the Tower/Equipment Foundations.	As required by Bidders design requirements and as per Soil investigation reports
57				Do we need to consider any PCC Slab below 50mm thick gravel spading as yard surface Turffing.	Bidder to provide PCC slab below gravel. Thickness of PCC slab shall be min. 75mm
58				Shall we consider the length of fencing is as 270mtr with 2 nos gate(10mtr) and height of 1.8m	Bidder to design as per the requirement.
59				We shall consider size of Burn Oil Pit as 3x3x3m (LxWxD).	Bidder to refer to 220KV Switchyard Equipment layout available in tender document and the relevant IS standards
60				Do we need to consider any Pile work below Fencing Post and Gate Post.	As required by Bidders design requirements and as per Soil investigation reports
61				Please confirm whether Boundary/Retaining Wall in our scope or not.	All structures required for the successful completion of the Facility shall be Bidder's scope.
62				Any work of Transmission Tower is not in our scope.	All structures required for the successful completion of the Facility shall be Bidder's scope.
63			220KV SWYD. EQP. LAYOUT	1. Cl. 5.3.4.(d) & (f) , Page 11 of 32, Doc. ID 6695-ELT-526-CA-0002, Scope of Work / 11KV Cables from New Sw. Gr. To 8 Nos US/S. a. It is stipulated that " Wherever existing Pipe / Cable Rack are not available, LSTK Contractor shall consider new cable tray supporting structure" b. We understand that the Line should be read as " Wherever existing Pipe / Cable Rack are not available & New Pipe Racks are not under proposal by owner as per Drg. No. 6695-LAY-G00-LD-0001, LSTK Contractor shall....." c. In case, New Construction is necessary, they will be for New Cable Supporting Structure, which may be :- - Over Head Cable Support Structure keeping a minimum ground clearance of 4.0m and raised to 8.0m at Road Crossings having Tray Support arrangements on one / both side & a walk way of width 600mm. No Cover is required either at Top or on sides. For Access to the Walk-way, Portable Ladder / Stair (of Suitable Height) shall be provided. Vertical Gap between Trays shall be 350mm with Gap at bottom most tier to floor as 150mm. Hand Rails shall be available on atleast one side of the Walk-way. Shall be designed to IS : 800. Otherwise, - It may be RCC Cable Trenches as per Industry Standards with removable Pre-cast Slab and Road X-ings made to Suit Vehicular Loads OR - Wherever, Minor Structures eg. Drain / Fence may come along the Route of Cables, Cable Tunnel (similar to Trenches BUT the Top of Trench at a depth of 1.5m from GL) may be considered. Please confirm.	Bidder to design as per their requirement. Bidder to follow tender document. a. Bidder to refer to Clause 5.3.4 of the document Scope of work for Contractor - Electrical. b. Bidder to refer to reply for Sr.no. 21 & 22 above c. Bidder to design as per various documents available in tender. This is part of detail engineering.
64			Bid Submission Date/Time	As per NIT the due date for submission of bid is on 9th July 2018, which is very short considering the criticality and nature of this project. Hence we request you to provide us 4 weeks time from the date of upload of pre bid clarifications & reply.	Bidder to refer to separate correspondence in this regard


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65			SLD: 220KV extension from existing switchyard	Kindly confirm distance from existing switchyard to new proposed bays of 220KV.	Bidder to refer 220kV Switchyard Equipment layout(Doc No.: 6695-ELT-526-LH-0001) attached in the tender.
66			SLD: 220KV extension from existing switchyard	Kindly confirm as incomers are UG Cables, do we need to consider cable differential relays for same?	Bidder to follow all protections as per Detail SLD and technical specifications available in tender
67			SLD: Busbar protection	SLD: Our scope is limited to supply of Busbar bayunits for 220KV Trafo bays which will be integrated with existing ABB Make Central unit. Kindly confirm.	Bidder to consider new central unit & interface with existing central unit in existing busbar protection panel.
68			SLD : LBB Protection	Kindly confirm LBB Protection will be inbuilt feature of busbar bay units.	Confirmed
69			SLD: Transformer Protection	Kindly confirm if protection scheme should be similar to existing scheme?	Bidder to follow protections as per detail SLD available in tender
70			SLD: Busbar protection	SLD refers for dedicated panel for 220KV busbar protection. Kindly clarify	Bidder to consider dedicated panel as indicated in the SLD for 220kV switchyard available in tender
71			Scope of work, clause No.3 i)	Kindly confirm if new SCADA to be proposed for Extension bays of 220KV, 5th Stream, 33KV & 11KV or to be integrated with existing SCADA System.	Bidder to consider new SCADA as elaborated in the clause 6.0 of the document Scope of Work for Contractor - Electrical and technical specification of SCADA. Bidder also to consider interface of new system with existing system as per Clause 6.1.1 of the document Scope of Work for Contractor
72			Scope of work, clause No.5.3.9, Miscellaneous items	Kindly confirm list of spares to be provided for Control & Relay panel for 220KV.	Bidder to refer spare Philosophy document(Doc No: 6695-ELT-526-CA-0005) available in tender.
73			Scope of work, clause No.5.3.9, Miscellaneous items	Kindly confirm if Numerical relay test kit is required to be considered or not?	Bidder to note that as stated in clause 5.3.9 "Any other equipment, not listed specifically above but required for completion of the work within the scope of the PACKAGE (as described in this tender and the associated documents) shall be included in the scope of the LSTK CONTRACTOR". Bidder to consider accordingly.
74			Scope of work, clause No.5.5, Other Services, clause no.3.7.4 CRP:	Kindly confirm if existing busbar protection Central unit is capable of accomodating 2nos extension bays.	Bidder to refer to reply for Sr.No. 67 above
75			SLD Note no. 7 & CLAUSE 2.1.2 crp: refers for separate DR/Harmonic analyzer for CRP.	We propose DR/harmonic analyzer as inbuilt feature of numerical relays. Kindly confirm.	Bidder to follow tender document.
76			Clause No.2.1.2 CRP	Kindly confirm type of meters to be provided in trafo panels.	Bidder to refer SLD(Doc No:6695-ELT-526-FA-0001) attached in tender.
77			Clause No.3 Numerical relays	We propose availability of spare parts & support services for 5years	Bidder to follow tender document
78			Clause No.3.7.4: Unit Protection functions:	We propose cable differential relay on FO & not on pilot wire. Kindly confirm.	Bidder to refer to clause 5.3.4 of the document Scope of work for Contractor - Electrical
79			Clause No.2.2 SCADA, point 4:	Kindly confirm if redundant links to be considered from 220KV CRP to ethernet switch?	Yes. Bidder to refer SCADA block diagram(Doc No: _6695-ELT-G00-FA-0005) attached in tender.
80		2.1 (3)	Patches for removal of software bugs shall be provided and installed free of cost for ten years from date of PO.	If any bugs due to ABB software we shall update the same, however any issues with respect to operating system, same will be rectified till the warranty period.	Bidder to follow as per tender.
81		2.3.3	Load shedding i) Fast load shedding	We assume the fast load shedding upto 11kV, and tripping will be hardwired.	Bidder to refer SCADA block diagram, I/O List, SCADA Specification available in the tender.
82		2.3.3	Load shedding ii) Under frequency load shedding	We have considered 4 stages for under frequency load shedding triggers. Please confirm	Stages for underfrequency load shedding shall be decided during detail engineering
83		2.3.10	Expandability: The system shall be expandable. Addition of hardware and up gradation and reprogramming shall be possible to take care of future expansion of system.	The system is capable to expand the future loads and upgradation, however the required modification ,addition of hardwares will be added with suitable price implication.	All requirement of hardware, software, space for spares / future use as specified in the tender shall be in Bidders scope without any price implication
84		2.3.10	Connectivity of NALCO's LAN through e-server for accessibility of graphics, trends, real time analog values in desktop PCs for 10users	Smart client facility for monitoring the graphics shall be provided in NALCO's LAN will through separate firwall/routing	Bidder to comply to tender requirement. All hardware / software required for complying to this clause of tender shall be in Bidders scope.
85		2.3.10	Provision for sending SMS to selected individuals for any Island operation / Load shed / Tripping of power source shall also be provided.	To send SMS, the required internet facility or modem shall be arranged by NALCO . Please confirm.	Confirmed
86		3.1.2	Communication between SCADA & existing DCS of CCR & SPP shall be provided.	We shall communicate with DCS on OPC protocol. Please confirm	Confirmed
87		3.1.4	The physical transmission medium of the plant data highway shall be fibre optic. k) GI Pipe for fibre optic cable routing	Fiber cable supply, GI pipe will not be SAS vendor scope. Same will be done LSTK vendor/EPC.	Bidder to consider the scope as per tender. Complete supply is Bidders scope


Plant	Client	Contract Code	Document ID	Contract No.	
1.0 MTPA ALUMINA REFINERY	NALCO	NAL	6695-PPM-0004	66-6695	
thyssenkrupp Industrial Solutions (India)	PROPOSAL FORMS (220kV SWITCHYARD & ASSOCIATED FACILITIES)			Rev 00 	
88		System configuration SAS	Control cable for the hardwire IO's at each unit (8nos)	Same will be taken care by other/LSTK/EPC	Bidder to refer various tender documents for scope clarity. Complete supply is Bidders scope
89		System configuration SAS	Unit wise SLD, shall be provided to get the Feeders/relays quantity	Please provide the same.	Bidder to refer SCADA I/O list for 220kV switchyard & Associated facilities available in the tender.
90			SLD Note no. 7 & CLAUSE 2.1.2 crp: refers for separate DR/Harmonic analyzer for CRP.	We propose DR/harmonic analyzer as inbuilt feature of numerical relays. Kindly confirm.	Query repeated. Refer reply above
91			Clause No.2.1.2 CRP	Kindly confirm type of meters to be provided in trafo panels.	Query repeated. Refer reply above
92			Clause No.3 Numerical relays	We propose availability of spare parts & support services for 5years	Query repeated. Refer reply above
93			Clause No.3.7.4: Unit Protection functions:	We propose cable differential relay on FO & not on pilot wire. Kindly confirm.	Query repeated. Refer reply above
94			Clause No.2.2 SCADA, point 4:	Kindly confirm if redundant links to be considered from 220KV CRP to ethernet switch?	Query repeated. Refer reply above
95			General Technical Queries	As per tender SLD only scope mentioned for LSTK -Pkg 12 is under present tender scope, please confirm.	Bidder to refer the complete tender document to understand total scope of package.
96			General Technical Queries	There is no separate format for transformer loss declaration, please confirm is there any specific format in tender, we assume that loss evaluation will be applicable only for 60 MVA 220/ 11.5kV & 8.5MVA 11/34.5 kV transformer, please confirm.	Bidder to refer SP Forms in volume-1 of the tender.
97			General Technical Queries	The switchyard plan drawing (drg no -6695-ELT-526- LH- 0001) is not matching with SLD (showing 2 no isolator instead 1 no isolator & 1 no CB), please also confirm the scope of work in existing switchyard (if any busbar extension, termination arrangement to be done).	Switchyard plan drawing & SLD are matching. Bidder to refer the complete tender document to understand total scope of package.
98			General Technical Queries	Please share the Auto Cad copy of the complete plant plot plan for estimation purpose. Also provide distance or proposed cable route for 11kV new SWGR to all 8 no 11kV unit substation, the 33kV ICOG panel location also to be indicated.	Autocad drawing shall be provided in Addendum. Refer reply for Sr.no. 21 above. Refer New switchgear building arrangement drawing for location of 33kV ICOG panels
99			General Technical Queries	Please confirm type of laying for 220kV cable, it will be directly buried or through RCC trench, also mention the size and no of runs to be considered. Please share tapping details and cable connection arrangement drg for existing switchyard side.	Bidder to refer clause 5.3 of Scope of work for contractor-Electrical
100			General Technical Queries	We have not found any specification for 220kV outdoor termination kit, please share the same.	Bidder to consider as per their design requirement
101			General Technical Queries	As per scope existing 11kV SWGR at CDS extension to be considered, we assume only 2 no feeder addition to be considered along with double bus bar extension, please share existing SWGR drg for checking the suitability of extension. We have not considered any major civil work in CDS for provision of 11kV SWGR extension.	Existing 11kV Switchgear drawings shall be provided in addendum. Scope of work in existing CDS shall be as per Clause 5.3.6 of the document Scope of work for contractor-Electrical
102			General Technical Queries	We need clarification for following equipment / pkg supply & erection scope to be considered or not, please confirm. a) 2 no 8.5MVA 11/34.5kV Transformer. b) 2 no 33kV ICOG SWGR and associated cable. c) 11.5 kV Cable from 25MVA 11/11.5 kV Transformer to 11kV SWGR.	a & b - It is in Bidders scope. Bidder to refer clause 5.3.2 of Scope of work for contractor-Electrical. c- As indicated in SLD it is by Owner / Others
103			General Technical Queries	Please mention the location of 220kV new trafo bays CRP panels and if any integration to be done with existing switchyard, also confirm the requirement of 220kV cable differential protection for new bay incoming cable.	Bidder to refer clause 5.3.5 of Scope of work for contractor-Electrical. Bidder to follow all protections as per SLD.
104			General Technical Queries	The complete 220KV CRP and protection system shall be as per tender protection SLD 6695-ELT-526-FA-0001. Please also clarify following points: a) No protection for 18.5 MW generator & associated 25MVA trafo protection are considered in this package scope. b) Please clarify where HT (220, 33 & 11kV) cable differential protection to be considered. c) Please share the details of existing switchyard CRP for interfacing purpose, if any.	a & b - Bidder to follow the SLD for all protections c- Bidder to obtain the details during site visit.
105			General Technical Queries	We have considered SCADA (to be located in HT-212 room) for control & monitoring of the following electrical system, please confirm if any additional / deletion of following scope to be required. a) 2 no new 220kV Trafo Bay. b) New 11kV SWGR located in HT-212 room. c) 33kV SWGR located HT-213 & HT-214 room. d) Integratio / Interfacing with all 8 no 11kV Unit Substation (US-501 to US-508) e) LT Aux system like Battery Charger, UPS, ACDB, etc. f) Integration / interfacing with existing 220kV SWYD SCADA. g) CDS existing & extended 11kV SWGR interfacing with new SCADA.	Bidder to refer to Clause 6.0 of Scope of work for contractor-Electrical, Battery Limit & Interfaces - Electrical, Key SLD & SLD for 220kV switchyard, SCADA block diagrams available in the tender.

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1.0 MTPA ALUMINA REFINERY	NALCO	NAL	6695-PPM-0004	66-6695		
thyssenkrupp Industrial Solutions (India)	PROPOSAL FORMS (220kV SWITCHYARD & ASSOCIATED FACILITIES)			Rev 00  नेशनल एलुमिनियम कंपनी लिमिटेड National Aluminium Company Ltd.		
106			General Technical Queries	Please confirm and share following clarification & inputs regarding SCADA pkg. a) FO cable from SCADA to all 8 no US (501 to 508) and 33kV SWGR , existing 220kV SWGR to be considered or not. B) Please share existing 220kV SCADA & US (501 to 508) SCADA details for integration purpose.	a. Bidder to refer SCADA block diagram, I/O List, SCADA Specification available in the tender. It is Bidders scope. b. Refer clause 6.5 for probable makes of vendors at unit substations for integration purpose.	
107			General Technical Queries	Please indicate the size of battery & UPS to be considered and location of same to be confirmed , 220kV switchyard bay aux supply to be fed from existing switchyard control room or new 11kV SWGR control room (HT-212) , also mention the aux supply availability of all switchyard area new load.	Bidder to size battery & UPS as per their design requirement as per clause 4 of the scope of work document. For location & other scope clarity refer to Scope of work for contractor-Electrical ,Battery Limit & Interfaces - Electrical, Key SLD & SLD for 220kV switchyard, Substation layout for new 11kV switchgear building	
108			General Technical Queries	We have considered AC & ventilation , illumination , fire fighting & earthing work for following area only , please confirm if any additional package & location to be considered. a) 220kV 2 no bay extension switchyard area . b) 11kV New SWGR Room (HT-212). c) 33kV ICOG Panel Room (HT-213 & 214). We have not considered any additional insulation , piping , rotation machine , painting scope in our offer.	Bidder to refer to all documents in tender for complete package scope of work	
109			General Technical Queries	Please provide any list for mandatory spares , tools & tackles and detail factory training requirement for our consideration.	Bidder to refer to Scope of work for contractor-Electrical for tools & tackles & training reqmts & Spare philosophy document available in the tender	
110			General Technical Queries	We don't have considered any load shedding scheme for this tender package , please confirm . Please also confirm the list of system study to be considered.	Load shedding scheme to be considered as per Scope of work document & technical specification for SCADA. System studies to be considered as per Clause 5.3.8 of document Scope of Work for Contractor	
111			General Technical Queries	We don't consider any 3D modelling drawing for this package through PDMS software , only auto cad drawings to be submitted for complete job , please confirm.	Confirmed	
112		CI-3/NIT/page 2	Time schedule for Completion.	Please clarify the definition of successful commissioning.	Bidder to refer to Clause 16 of document Scope of Work for Contractor - Electrical	
113			220kV Cable Protection	Please advise the protection philosophy for 220kV Cable.	Bidder to follow all protections as per SLD	
114			Busbar Master unit	We understood that the existing busbar master unit relay has sufficient capacity to handle the additional busbar without any hardware modification.	Refer reply to Sr.No. 67 above	
115			Existing Civil and structural drawing	Please provide the civil and structural drawing of existing control room and 11kV Switchgear buildings which has to extend in this tender scope.	Bidder to obtain all necessary details during site visit	
116			11kV HT Cable	Please recommend the 11kV HT Cable size envisaged by you.	Bidder to design the cable size based on method of laying, load requirements & short circuit values provided in Clause 5.3.4 of the document Scope of work for Contractor - Electrical.	
117			11kV Busbar Protection Scheme	we understood the 11kV busbar protection is decentralized type and individual bay units shall be mounted in respective HT Panel. Central unit has been accommodated in a separate panel. Please confirm.	Bidder understanding is correct.	
118			11kV Tranformer feeder	For TR-2104M & TR-2105M Transformer feeder, Pl clarify whether 87L is line differential relay or transformer differential relay. Also confirm the location of the relay.	It is transformer differential protection relay as indicated in the SLD. Location of the relay is in 11kV switchgear as indicated in SLD.	
119			11kV Downstream Substation	Please confirm the all 8 Nos. 11kV Downstream substation location.	Locations of substations (US-501 to US-508) are indicated in Overall plot plan which is available in Volume-4, Section 4 - Piping of the tender.	
120			11kV HT Cable at CDS to New 11kV S/S.	Cable differential protection for 11kV Cables connecting Existing CDS and New 11kV switchgear not required. Please confirm.	Confirmed. Bidder to follow all protections as per SLD	
121			11kV switchgear panel	We understood that total 32 Nos. Breaker required in 11kV Switchgear Panel & 2 Nos breaker in CDS.	Bidder to follow SLD 6695-ELT-526-FA-0001 available in the tender.	
122			4 (dd)	Specification for EHV cables shall match with existing EHV cables in existing 220kV switchyard.	Bidder to refer to Existing documents available in Volume 5 in tender. Bidder to obtain any additional information required during site visit.	
123			5.4 (b)	Report on scanning of underground services	Owner needs to furnish the input data.	Bidder to carryout the scanning to envisage any underground services as indicated in the referred clause
124			5.4 (c)	Compilation of load data, its analysis and determination of sizes of various electrical equipment	we understand that the switchgear sizing is done considering all loads and no re-validation of switchgear transformer sizing required.	Bidder understanding is correct. However during ETAP study bidder to consider actual load provided by OWNER/Others.
125			5.4 (t)	Preparation of relay setting charts	Existing relay setting data required to be furnished by owner.	Same shall be provided by Owner during detail engineering.
126			9.1	Fire Hydrant System	Please provide the details of fire water network. Also provide the tapping point on network for various hydrant system.	Drawing for existing fire water network shall be provided in Addendum. Further details to be collected from Site by the Bidder during their pre-bid visit.
127			4.1.6 & 4.1.10	shuttering work	As per clause 4.1.6 wooden/steel shuttering allowed while in clause 4.1.10 only steel shuttering allowed. Please confirm.	Please ignore Clause 4.1.10. The same will be deleted.

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1.0 MTPA ALUMINA REFINERY	NALCO	NAL	6695-PPM-0004	66-6695	
thyssenkrupp Industrial Solutions (India)	PROPOSAL FORMS (220kV SWITCHYARD & ASSOCIATED FACILITIES)			Rev 00  National Aluminium Company Ltd.	
128				We are considering control room, SCADA Room, 11kV Switchgear room, office room for HVAC area. Please confirm.	Bidder to refer GES and Substation arrangement layout of new 11kV switchgear building for the requirement..
129				kindly inform the distance of land allocate for store, Labour colony etc.	Bidder to refer to the Overall plot plan in Addendum
130				Any enviromental clearance shall not be the scope of bidder.	Bidder understanding is correct.
131				We are considering that proposed substation design has been approved by OPTCL. Further any new system design approval will not bidder's scope. However any further approval from OPTCL for construction proposed substation shall be in bidder's scope and owner to support for necessary process to take an approval.	Bidders understanding is not correct. Bidder to take all approvals based on actual alyouts prepared during detail engineering. Also Refer reply to Sr.no. 44 above. Bidder to also refer to the document Scope of Work for Contractor
132				Type test report not older than 10 years for major equipment shall be acceptable by owner. Please confirm.	Bidder to follow ITP(Part of individual specifications) in tender document.
133		SLD	Current Rating	Please note that for 11kV DBB switchboard, we can provide current upto 2500 with 10% derating i.e 2250A for panels with isolators and 3150 A with 10% derating i.e 2835A for panels without isolator. Kindly accept the same.	HT-212 shall be 11kV single busbar switchgear. Bidder to note that wherever HT-212 has been referred as double busbar switchgear in the complete tender, the same shall be now read as single busbar switchgear and accordingly the design shall be carried out for the complete package. Revised SLD shall be provided in Addendum.
134		2.1 (a)	Enclosure	We shall offer panels made up of special material called "Alu Zinc". Alu Zinc is light in weight, has more strength, and extremely corrosion resistant compared to normal CRCA sheets and this does not require any surface treatment like powder coating. Panels shall be made up of Alu Zinc material except front doors & end covers which shall be painted sheet steel. We shall provide powder coated paint only for front doors and end covers, which shall be made of CRCA sheet. However, painting procedure and thickness shall be as per our standard procedure.	Accepted based on type tested design
135		2.1 (j)	VCB mounting	We have offered our cassette mounted design of the CB, where the breaker movement is through wheels inside the cubicle. Please note that, the distinct advantage of cassette mounted design is that, operation (rack-in/rack-out) of the line PT shall be independent of CB rack-in/rack-out operation. Cassette designs are globally adopted by leading switchgear manufacturers.	Bidder to follow tender document
136		2.1 (p)	Gaskets	We shall provide EPDM Gasket which is better than neoprene.	Accepted based on type tested design
137		2.2 (e)	Busbar sleeves	Please note that Hongshang sleeves shall be provided for the same.	Accepted subject to fulfilling of all technical data requirement as per tender specification and type tested design
138		2.4 (B)	Contactora	Please note that in the SLD , VCB's are shown. We shall provide VCB for the same.	Bidder to follow SLD 6695-ELT-526-FA-0001 available in the tender.
139		2.4 (C) (III)	Window	Please clarify if thermography window is required or not.	Not required
140		2.4 (D)	CT type	CT shall be cast resin wound/window type of insulation class B.	Type of CT wound / window type is acceptable. Bidder to follow tender document for insulation Class E or better
141		2.4 (F)	Ferrules	We shall provide sleeve type ferrules which can be read in better way, instead of interlocking type ferrules	Accepted
142		2.5	Nameplates	Please note that the same shall be as per OEM standards and in line with previously executed NALCO projects.	Accepted
143		2.8	Painting	Painting : We have offered panels made up of special material called "Alu Zinc". Alu Zinc is light in weight, has more strength, and extremely corrosion resistant compared to normal CRCA sheets and this does not require any surface treatment like powder coating. Panels shall be made up of Alu Zinc material except front doors & end covers which shall be painted sheet steel. We shall provide powder coated paint only for front doors and end covers, which shall be made of CRCA sheet. However, painting procedure and thickness shall be as per our standard procedure. The same is accepted in previously executed projects and the same shall be attached for reference.	Accepted. Paint shade shall be as per tender requirements
144		44	Material of enclosure	Please note that the same shall be of Aluzinc.	Accepted based on type tested design
145		46	Gland plate	Please note that the same shall be 3 mm.	Bidder to follow tender document
146		59	Busbar material for DBB	Please note that for 11 KV double busbar switchboard., busbar material shall be copper. Also note that at 50 deg cel, the current ratings shall be derated by 10%. Please confirm.	Noted
147		61	Temp rise	Shall be as per IEC standards.	Bidder to comply to the maximum values of temperature as per IEC standards. Bidder to note that design ambient is 50degC. Temperature rise shall be accordingly considered.
148		63 (d)	Tin plating	Please note that we do not envisage tin plating of the same.	Bidder to follow tender document
149		130	Aux relay make	Please note that the same shall be of ABB make only.	Bidder to follow tender document
150		160	Fuse	Please note that the same shall be of ABB make.	Bidder to follow tender document
151		162	CT/PT Make	Please note that the same shall be of ECS/Pragati/Gemini make.	Bidder to follow tender document
152		SLD	CT VA Burden	Please note that CT VA burden shall be 2.5VA. VA burden calculations shall be submitted during detailed engg.	Bidder to follow SLD 6695-ELT-526-FA-0001 for min. VA burden. During detail engineering VA burden can be increased based on calculations.
153		General	General	Make of various bought out items such as CT/ PT, relays, meters etc shall be from our regular approved vendors. We do not envisage obtaining approval for the same.	Bidder to follow tender document

Plant 1.0 MTPA ALUMINA REFINERY	Client NALCO		Contract Code NAL	Document ID 6695-PPM-0004	Contract No. 66-6695
thyssenkrupp Industrial Solutions (India)	PROPOSAL FORMS (220kV SWITCHYARD & ASSOCIATED FACILITIES)				Rev 00  नेशनल एलुमिनियम कंपनी लिमिटेड National Aluminium Company Ltd.
154			Data Sheet- Power Transformer-Sr No. 101	Orientation of Primary & secondary winding terminals : 90 / 180 DEGREES Please clarify on the orientation of primary and secondary winding terminals. Whether 90 deg required or 180 deg is required.	Bidder to decide based on switchyard layout & cable routing during detail engineering
155			Existing Doc & Approved Vendor list	Please share the details of existing ECS / SCADA system of emmerson make for interfacing / integration purpose. The emmerson is not listed in approved vendor list , please confirm emmerson can be accepted as SCADA / SAS vendor or not.	Existing SCADA documents shall be provided in Addendum. Also acceptance of M/s. Emersion make for SCADA system shall be addressed in Addendum.
156			Technical Specification for load shedding scheme	Please clarify the scope of new SCADA based load shedding scheme integration with existing load shedding system , also share the details of interfacing details like communication protocol / redundancy , etc.	SCADA at new 11kV switchgear building shall also be interfaced with the network of existing system as per Clause 6.0 of the document Scope of work for Contractor - Electrical. Existing SCADA documents shall be provided in addendum.
157			Earthing (Battery limit - 3.9)	We understood that 220kV SWYD earthing mat shall be connected to existing switchyard earth grid and new 11kV SWGR building earthing to be connected to plant earthing grid . However , scope of connection with ISBL plant grid is not clear , please clarify the same.	Bidder to refer clause 5.3.9 of the document Scope of Work-Contractor for connection of earthing grid with Owners main plant earth grid.
158			FDA & PA Sytem (Battery limit - 3.7 & 3.8)	The FDA & PA system of new 11kV SWGR building (500) to central system at central control room (00) is not clear . Please confirm the scope of connecting cable & accessories for hooking up with central system to be considered or not .	The scope of all hardware required for hooking up with central system is in Bidders scope as per clause 3.7 & 3.8 of the document Battery limit & interfaces
159			Scope of Work - Electrical 5.3.4-k	Each unit substation load MVA given as per referred clause , please confirm each tie cable shall be sized for complete load or 50% of the unit load. Please note that any increase in unit substation load will change the 11kV SWGR & cable size , hence please confirm that unit substation loads are fixed and any increase in load shall have separate price implication during detail engineering.	Bidder to consider complete load for sizing. Bidder to consider the unit substation loads provided in tender for cable sizing for bidding purpose. However final load shall be communicated during detail engineering for deciding CT ratios as indicated on the SLD. Therefore no price implication is envisaged for variation in the load during detail engineering.
160			General Queries	Is there any isolation arrangement to be done between 220kV main bus-1 and 220kV cable tap off & 220kV cable and new busbar connection , please confirm.	Bidder to follow isolation arrangement as indicated in SLD & Switchyard Layout.
161			General Queries	We assume that the 11kV cable shall be laid through nearest existing pipe rack or upcoming pipe rack as shown in overall plot plant drg (6695-LAY-G00-LD-0001). However please clarify following scope of work related to cable laying work : a) We assume that existing & upcoming pipe rack shall be suitable for taking care the load of several runs of 11kV cable (including tray) , however fixing arrangement and minor modifications are under bidder scope , but any type of structural strengthening and major augmentation are not considered in LSTK -12 pkg scope , please confirm. b) Please confirm that any delay in project execution due to non availability of upcoming piping rack shall not be considered for LSTK -12 pkg bidder's account.	a) For new piperack routing indicated on the Overall plot plan - Bidder to note that the design of the new piperack shall be done by Others based on the load requirement furnished by the Bidder. For existing piperack - Structural strenghtening or any augmentation if required, shall be in Bidders scope b) Bidders understanding is correct.
162			General Queries	Please provide existing CDS 11kV SWGR end panel drawing for extension purpose.	Drawings of the existing 11kV switchgear shall be provided in Addendum.
163			General Queries	Please confirm that the possibility of increasing existing CDS building 11kV SWGR room to accommodate the extended 11kV SWGR and other equipment , if CDS building to be extended , please share the detail civil column & beam layout & foundation drawing of existing CDS building .	Detail scope of work in existing CDS building shall be elaborated in Addendum. Civil drawings of existing CDS building if available shall be shared during detail engineering
164			General Queries	Please confirm that spare feeder of suitable rating or replacing of the spare feeder with suitable rating new module shall be acceptable or not for tapping the incoming aux supply from existing board to new boards of LSTK Pkg -12. Please share the GA drawing of existing boards for checking the suitability for any further feeder extension.	Bidder to consider new vertical panels. Further details to be collected from Site by the Bidder during their pre-bid visit.
165			SCADA	Please provide further detail specification of load shedding system as per existing system , details drg & doc of existing scheme are required for future integration to make both system mutually compatible.	Existing system details will be provided in addendum

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1.0 MTPA ALUMINA REFINERY	NALCO	NAL	6695-PPM-0004	66-6695
thyssenkrupp Industrial Solutions (India)	PROPOSAL FORMS (220kV SWITCHYARD & ASSOCIATED FACILITIES)			Rev 00  नेशनल एलुमिनियम कंपनी लिमिटेड National Aluminium Company Ltd.
166			Switchyard SCADA communication & SLDC connection	Please clarify that , whether 220kV control & relay panels BCU to be connected with SCADA system or not . Please confirm any provision for SLDC communication to be considered or not for new 2 no Transformer bays. Bidder to note that 220kV CRP BCU to be connected to SCADA as indicated in various documents available in tender. Refer to Clause 6.0 of Scope of work for contractor Electrical, SCADA block diagrams, SCADA specification, I/O list. In line with the existing 220 KV network system following points related to data transmission to OPTCL to be considered. 1) Tap position indicator of Grid transformers to be sent to SLDC. 2) Following analogue & digital data for 02 no of Generator feeders: (as per Odisha Gazette: No 485, 29.03.2012, by M/s OPTCL on "Procedure on Communication & Data Transmission") - Voltage: R-Y / Y-B / B-R. - Frequency. - KW / KVA / KVAR. - Breaker Status. Bidder to consider all hardware required for achieving the SLDC communication as stated above.
167			Interfacing with Plant Process DCS	We have not considered any interfacing with plant main process DCS (existing & new) , please confirm the scope. Bidder to refer overall SCADA block diagram(Doc No: 6695-ELT-G00-FA-0005) for new DCS scope & SCADA Specification clause 3.1.2 (Doc No6695-ELT-G00-EC-0036) for existing SCADA interface attached in tender.
168			Cable laying system	We have done detail survey at site for complete HV cabling route and found following observations , please clarify the same . Some of the area in plant don't have feasible Cable route (towards unit substation 507 & front of CDS area) due to existing road , maintenance building , etc. So it is requested to accept cable laying through existing building wall (by fixing cable trays holding support) for particular area instead of providing new cable rack support structure arrangement. Since acceptability cannot be confirmed at this stage, Bidder to consider new cable tray support structure as appropriate.
169			Unit SWGR feeder list for IO calculation	Please provide the Unit Substation 11kV & 6.6kV SWGR feeder list for complete electrical system IO estimation , The IO list given in tender for typical individual feeder , total qty required from complete number of feeders. Bidder to refer SCADA I/O list for 220kV switchyard & Associated facilities(Doc No: 6695-ELT-G00-FS-0002) attached in tender.
170			Existing Pipe rack cable laying arrangement	Please provide the existing cable layout arrangement on existing pipe rack , same is required for estimating the present scope cabling BOQ. Bidder to obtain details from site during their site visit.
171			Pipe Rack earthing layout	Please provide the existing pipe rack earthing provision , we have considered earthing of top layer cable tray and connection with existing grid connected flat at 30 mtr interval. The existing pipe rack earthing down comer arrangemnet reured for interconnection with new cable tray earthing flat. Bidder to obtain details from site during their site visit and estimate accordingly. Detailing shall be done during detail engineering.
172			New SWGR building (500) area existing structures	We have found existing cable & piping structure beside the location marked for new SWGR building (500) , during civil execution if dismantling / augmentation of same is required for access , please clarify the scope for same. Dismantling / augmentation of existing cable structures as indicated in the Substation arrangement layout New 11kV switchgear building doc. 6695-ELT-526-LH-0007 is not envisaged. However Bidder to refer to clause 13.1.4 of document Scope of Contractor - General for dismantling of other facilities, if any
173			CDS to New SWGR building (500) walkways	We have considered RCC walkway between CDS & 500 SWGR building with RCC column support , please confirm that same is acceptable or not. RCC or Structural Steel platform, both are acceptable provided the walkway is linked with landing platform of US-500 & width shall be enough for shifting of material to both new / old substation building.
174			220kV Cable Trench	As per specification 220kV cable trench is mentioned as sand filled trench with RCC covers , please clarify the requirement of RCC covers . Please confirm whether buried trench or RCC trench to be considered. It is also requested to accept laying of 220kV cable over cable rack support. Bidder shall consider sand filled RCC Trench with RCC covers as indicated in the typical installation detail available in Technical specification for Electrical Installation in tender. Bidder proposal for laying of 220kV cable on cable rack support is not acceptable.
175			Existing Pipe Rack details	Please provided the height & structural section details of existing pipe rack structure. Bidder to obtain details from site during their site visit.
176			Dismantling Scope	As per site visit following dismantling scope are considered under LSTK -12 pkg , please confirm if any additional scope to be considered. a) Existing sand bed , sludge pond , clarifier , bitumen road at 220kV SWYD area. b) Dismantling the store and other associated existing building to get space for New 500 SWGR building . Demolition and dismantling of existing facilities is not part of Bidder's scope of works. Levelled land shall be provided by Owner; micro-grading shall, however, be bidder's scope of works. Refer Clause 2.1.3 of 6695-CVC-526-CA-0001.
177			Modification of existing building	Any kind of modification work in any existing building not in present scope , only extension of SCADA room in CDS building and walkway connection between CDS & New SWGR (500) building are under present scope . Please confirm. Bidder shall consider all modifications in the existing building as described in tender. Requirement of additional modification, if any, shall be provided in addendum.

Plant 1.0 MTPA ALUMINA REFINERY	Client NALCO	Contract Code NAL	Document ID 6695-PPM-0004	Contract No. 66-6695
thyssenkrupp Industrial Solutions (India)	PROPOSAL FORMS (220kV SWITCHYARD & ASSOCIATED FACILITIES)			Rev 00  नेशनल एल्युमिनियम कम्पनी लिमिटेड National Aluminium Company Ltd.
178			Standard drg & doc	The 220kV RCC / buried trench & Cable support rack (where no existing pipe rack available) shall be designed as per site suitability by bidder during detail engineering . Please confirm is there any specific standard drawing & doc for same to follow by bidder during execution.
179			Road & drainage Connection	We have considered road & drainage connection at 220kV SWYD & New SWGR Room (500) area with nearest existing road & drain. Any modification of existing road & drain along with further extension beyond battery limit are not considered in present LSTK 12 pkg scope , please confirm.
180			Specification for EHV cables shall match with existing EHV cables in existing 220kV switchyard.	As per OEM standard minimum order quantity required is 1000 Meter. However as per layout 220kV cable quantity comes below 1000 Meter. Kindly suggest if excess quantity shall be accepted by owner.
				Bidder to refer to all typical installation details provided in tender (Doc No: 6695-ELT-G00-EC-0027)
				Tie-in at nearest existing road and drain is ok. However, exact tie-in point shall be decided during detailed engineering. Access roads to the LSTK-12 facilities and roads around / within LSTK facilities shall be provided as required, by successful bidder. Refer Clause 2.2.18 and 2.2.29 of 6695-CVC-526-CA-0001
				All purchasing restrictions to be accounted by the Bidder. Refer to Clause 12.1 of SCC Part A for surplus quantities