

## ANNEXURE

### Supply and installation of Lightning Current Data Acquisition System at SDSC-SHAR

#### 1.0 Details of site

Location of Plant : Sriharikota, AP

Elevation: 4.2 m

Access to Site: Road- From North of Chennai is apprx. 100 km.  
From East of Sullurpeta in Nellore dist is approx 28km.  
Rail- Chennai –Vijayawada rail track line

#### Climatic Conditions

##### a) Temperature

Mean of daily max	:	42.2 °C
Mean of daily min.	:	11.8 °C
Maximum Temperature	:	44.6 °C

#### 2.0 Introduction

The contract is for realization of lightning current data acquisition system (LCDAS) at second launch pad, SDSC. **The LCDAS shall comprise 4 independent lightning current data acquisition units** and shall be based on lightning current sensing using air core flexible rogowski coil. Each unit shall consist of the following.

- Rogoswsky coil based current transducer.
- Digitizer cum Digital Signal Integrator
- Data logging unit
- Associated interconnections, enclosures and accessories as required.

Each unit shall be installed in the outdoor environment at the anchoring point of lightning protection system (LPS) down conductor as shown in fig 1. LCDAS unit shall continuously monitor and in the event of lightning stroke to LPS, the LCDAS unit shall acquire the lightning stroke current data over the complete event and record the data in the logger as an event data file. LCDAS shall have capabilities to acquire both impulse and long-term currents. The data shall be downloadable to a computer and analyze using Microsoft excel software.

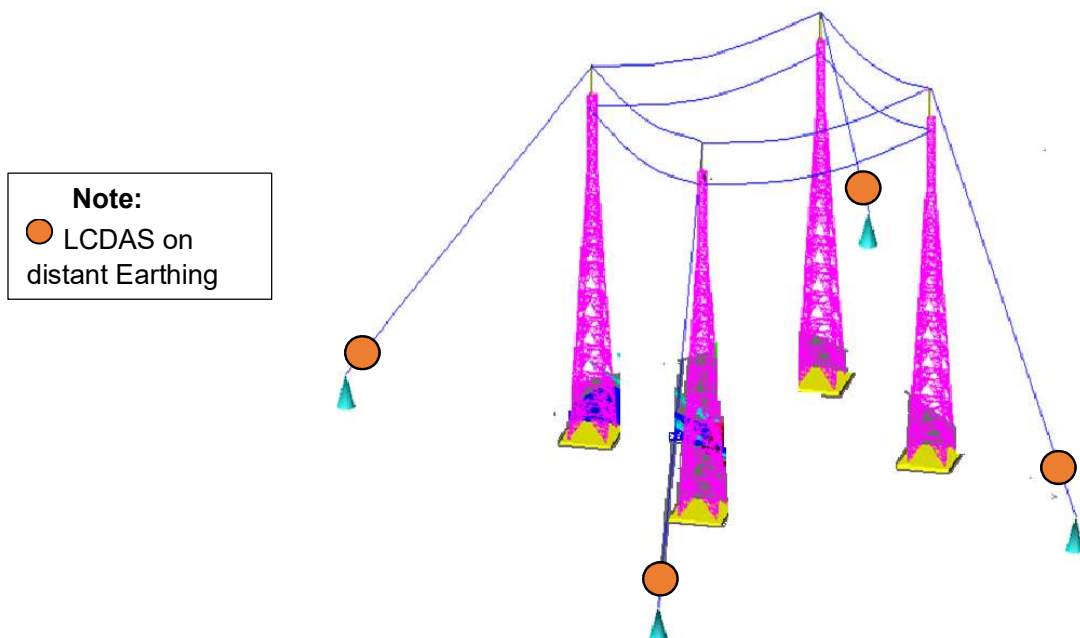


Fig 1 Isolated Lightning Protection System

### 3.0 Bidder's Scope

Supply and installation of Lightning Current Data Acquisition System at SDSC-SHAR. The LCDAS shall comprise 4 independent lightning current data acquisition units for each tower. Each unit shall comply with detailed specification furnished section 4.0.

### 4.0 Technical Specifications of Lightning Current Data Acquisition Units

Parameter	Specification
Equipment Operational Power supply Voltage & Frequency	Single Phase 230V±10% 50Hz±5%
Impulse Current Measurement Range (Iimp 10/350 µs)	500 A to 250 kA
Long-Term Current Measurement Range (Icc)	80 A to 2 kA
Measuring method	Current sensing using Rogowski Coil
Measurement Accuracy Impulse Current	2 kA - 5 kA ±10%; 5 kA - 200 kA ±10%
Measurement Accuracy Long-Term Current	100 A - 2 kA ±10%
Charge Accuracy for Long-Term Current (Qcc)	50 As to 500 As ±10%
Measured parameters	Max Current [kA], max di/dt [kA/ms], specific energy [kJ/Ohm], Charge Q [As]
Trigger threshold value	Adjustable
Data Logging	The data logger should store more than 500 events
<b>Environmental Conditions</b>	
Operating Temperature	Up to +60°C
Maximum Humidity	90% (non-condensing)
Protection Rating of Main Components	IP20 for data logger modules; IP54 for measuring coils
<b>Communication Features</b>	
Digital I/O	Modbus TCP interface For data transmission and configuration, supporting 10/100 Mbps
<b>Mounting and Installation</b>	
Coil Mounting	Rogowski coils should be installed on the metallic down conductors of diameter 12mm as detailed in section 3.0 .
Standards Compliance	System shall comply relevant BIS/ IEC 61643, IEC 61000-6-2, IEC 61000-6-4, and EN 61326-1.
Quality Assurance Certifications	Product certification according to national /international standards
Certification	Offered system shall be tested end to end in HV laboratory Accredited by KEMA/VDE/DAKKS/NABL for compliance of design specifications.
Documentation to be submitted along with the item	User manual, installation guide, calibration instruction manual

## **5.0 General Terms and Conditions**

### **5.1 Bidder qualification criteria**

- a) Bidder shall be OEM /authorised channel partner of offered item.
- b) The offered item model should have been in operation in any firm with work performance should have been proven to be satisfactory.

### **5.2 WARRANTY terms**

All supply items shall be offered warranty for the period of 12 months from the date of complete system commissioning and acceptance at our site against all manufacturing defects and free replacements of failed components/fittings shall also be included in the offer for warranty period.

### **5.3 DELIVERY SCHEDULE**

The items shall be delivered and installed within 8 weeks from the date of receipt of the P.O.

### **5.4 ADDITIONAL INSTRUCTIONS TO THE BIDDER**

- a) All the items to be supplied under this contract shall be new.
- b) All necessary facilities including tools, testing equipment, instruments, accessories, manpower assistance etc. shall be provided by the supplier to enable inspection and testing of installed system during inspection, testing and commissioning.
- f) Safety of workmen engaged by the agency is whole & sole responsibility of the agency.
- g) The agency may ensure suitable insurance coverage for his men & materials
- h) The agency shall ensure that all the personnel engaged by them are adequately experienced in the type of work.
- i) The agency shall take adequate care while working at site to avoid damages to the departmental properties and if any, the agency shall repair/ make good to original condition within 3 days as instructed by the Departmental in charge.
- j) The area/campus where the works proposed comes under high security coverage. Hence agency has to ensure that every procedure is strictly adhered by them in the campus. Following are the gist of general guide lines and all rules and regulations by security agencies and SDSC shall have to be strictly followed.
- k) The agency should ensure that all personnel engaged by them are adequately briefed about the security procedures in the campus. All personnel engaged for this work shall have clear credentials and proof as asked by the Dept shall be produced on demand.
- l) The agency shall ensure that all personnel engaged by them are wearing ID pass issued by Dept as well as agency throughout the working time. Their movement within the campus shall be restricted to the work site and related offices and within the time permitted only.
- m) All materials/tools brought by the agency shall be declared at security agency and one copy of the DC shall be kept at site throughout the contract period.
- n) The agency shall make own arrangements of the safety of materials / tools brought by them. The agency shall also ensure that he or his personnel are not bringing inside any material which is not required for the contract works.
- o) Temporary electrical power supply for installation works at site will be offered by SDSC at free of cost.**