

. The CCTV System for monitoring of area along with all its components, i.e. necessary hardware and software, the number of camera units, servers, network video recorder, network switches, module and software, any other hardware/ software required for the safe and satisfactory operation, control, protection, monitoring, testing and maintenance of the system shall be provided by the Bidder. The exact locations shall be decided during detailed engineering. The system operation would be covering the complete view of the areas with pan / tilt, zoom, propositioning of the cameras and with programmability to monitor any camera on any monitor either manually or automatically in a defined switching.

1. All cameras shall have CE/FCC/UL/BIS certification with consideration that cameras shall meet or exceed the statutory requirements as per applicable government norms.
2. The camera & Video Management Software shall be ONVIF compliant.
3. The CCTV System along with all its components i.e. Display monitors, network switches, storage devices, network recorders, LAN switches, media converters, cameras etc. shall be powered from the UPS system (min. one hour back up).
4. IP indoor dome cameras shall be minimum 2 MP Indoor dome and IP outdoor IR PTZ camera shall be minimum 5Mpx IR PTZ camera shall be provided.
5. The central display unit with feed from all cameras shall be placed in the CCR and in the Site In charge Room. The server memory needs to be sufficient for storage for 6 months.
6. All the cameras and accessories are to be housed in Weatherproof IP 65 environmental Housing. The housing, with heater and blower installed, shall provide protection for camera/lens assemblies in the ambient temperature range of – 0 deg. C to 50 deg. C.
7. Network Switches shall be of high quality, industrial grade. The common switch to which all networks are connected shall be Layer-III switch/router.
8. Workstation and Camera/Database Server- To be provided as per system requirement, shall be industrial grade, RAM and hard disk/storage memory shall be sized to meet functional requirement.
9. All recordings shall have a camera ID, Location, Date and time of recording. It shall be possible to export selected portions of recordings to portable media devices. The exported clip shall be in commonly used movie file formats e.g. MPEG, AVI and no special software shall be required to view the same.

The total Camera quantity shall be minimum 20 Nos. Including 15 nos. for outdoor and 05 nos. for indoor. The final number of cameras shall not be limited to the quantities mentioned above. The exact quantity and type (indoor/outdoor) shall be finalized during the detailed engineering, based on site conditions, surveillance coverage requirements without any extra cost to NTPC.

#### Control Room