



KINECTRICS

Physical Security at Nuclear Facilities



Kinectrics has extensive Physical Security experience at Nuclear facilities. Our background includes studies, modification packages, engineering, procurement and construction (EPC), vulnerability assessment, program audits, calculations, drawing development, procedure revision,

and onsite installation/testing support. Kinectrics has qualified Safeguards (SGI) vault that has been approved by numerous utilities which allows us to update SGI material in house. We have a large staff that have both SGI and Critical Group clearances.

Subject matter areas include, but are not limited to:

- Installation of new Primary Access Point buildings which includes fence relocation and design, intrusion detection equipment (microwave, volumetric magnetic field and sensitive fiber), fixed and PTZ cameras and junction boxes with field of view calculations, search train design (explosive detectors, metal detectors, xrays, bullet resistant over watch and turnstiles), blast barriers, standoff calculations, vehicle trap, pop up barriers, door controllers, remote multiplexor, security diesel and UPS power tie-in and high mast lighting
- Plant Security Computer upgrades and replacement. Scope of work have included head-end (servers, workstations, monitors, alarm station equipment etc.), back-end (multiplexers, door controllers, card readers, turnstile control etc.) and video equipment (Live and recorded playback, NVRs, DVRs, Storage Servers, Video Clip Servers, video workstations etc.) replacements
- Alarm station remodel/upgrade
- Continuous assessment modifications to install day/night cameras, thermal cameras, Infrared (IR) cameras and IR illuminators
- General Assessment fixed and PTZ camera installations. Modifications have included the use of video analytics
- Security communication upgrades and installations including landlines, security intercom and security radio systems (analog and digital)
- Expansion of barriers, blast analysis and penetration analysis to ensure standoff distances are adequate
- Design Change Packages to install local and remote controlled barrier systems (i.e. pop-up and arm type barriers)
- Design Change Packages to install armored shooting positions (rooftop, terrestrial and in plant), armored walkways and Bullet Resistant Enclosures including towers, foundations penetrations etc.
- Installation of assessment and detection equipment for Unattended Pathways
- Plant Security Computer replacement technical and procurement specification development



- Audits of Security Programs
- Plant decommissioning security including ISFSI assessment and detection Design Change Packages including new ISFSI access facilities
- Security power replacements and upgrades of uninterruptable power supplies, inverters, chargers, batteries, diesel tie-ins, distribution panels. 480V, 240V and 120V UPS installations
- Created test plans for security power systems to take measurements with a power analyzer and processed the data to determine unintended loads and to quantify actual load and margin
- Modification packages to install external Intrusion Detection System (IDS) equipment (microwave, active infrared, electric field sensors, fence mounted systems, laser) and internal IDS (passive infrared, video detection with analytics, BMS, microwave and dual technology sensors)
- Security lighting analysis with foot-candle maps, security lighting replacement from HPS to LED and installation of high mast and wall mounted lights
- Security flooding analysis
- Security Target Set identification and review of advisory and officer timelines
- Design of vehicle traps including fencing, crash barriers, assessment and detection equipment
- Department of Energy and Department of Defenses Regulations

We have extensive knowledge of the various security regulations and industry guidance documents. We have worked hand-in-hand with various security vendors to ensure that design change packages are delivered at a high quality. This has included participation in Factory Acceptance Testing at the vendor facilities. We are an active member in Physical Security workshops and conferences ensuring that we stay on the leading edge of the industry.

Kinectrics supports utilities in the full range of design engineering services needed to develop, design, implement and commission Physical Security upgrades. Our security implementation modifications offer:

- Potential for the utilization of a similar design at multiple sites providing increased quality with cost savings.
- Conceptual design through construction and modification package closeout.
- Full multidisciplinary engineering and architectural design and construction team.
- Performing design from conceptual to final and build with Kinectrics as the prime, managing a general contractor and many subcontractors including quality control and safety oversight.



Kinectrics has numerous personnel that are familiar with the various security regulations – for example, Regulatory Guide 5.76 and 10CFR Part 73 – and personnel that have SGI and Critical Group clearances, and are considered subject matter experts in regulations, protective strategies, the types of equipment available and approved, material analysis for blast ratings, blast calculation, and installation.



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