TSS Example is a small yard with a manual dual swing gate off The Example Parkway with cyclone style chain link in 2" & 1" fabrics. It has RR tracks on the West side with a bridge towards the SW corner. The grade level is the same on the West side but significantly changes on the other three sides; averaging 6'-9' in height. The driveway has an incline at 1-2% leading to the yard. There is one switchgear building. The yard has some lighting and one PTZ (assumed) mounted on the SW side of the building. There is a relic news stand that forces the yard to jut inwards on the SE corner. NOTE: There are possible overhead clearance issues present with powerlines crossing the West side perimeter.

The Utility Owner restricts physical access to unauthorized personnel in controlled areas by utilizing barriers, such as fences, gates, locked entryways, proper security procedures & other control measures. Understanding that physical security risks are only mitigated and not eliminated, Utility Owners must implement overlapping layers of security components that complement each other by utilizing several principles of security. This leads to an effective defense in depth plan and the six main principles are outlined below:

- Deter
- Detect
- Assess
- Delay
- Respond
- Deny

**PERIMETER**

- Total perimeter is approximately 900’ in length
  - There is one inside corner and five outside corners
    - A gate meets the East perimeter fence at the NE corner

- 1 main vehicle entrance gate for authorized personnel
  - Gate is located in the NE corner of the yard off W. Congress Pkwy
  - Gate is a manual, double swing type with two E-Key locks for security
  - There little space for a vehicle to remain out of the street while opening the gate
  - This is the only entrance/exit gate
  - Gate leads to a driveway with approximately 1-2% grade to the electric equipment
  - No other gates or entrances/ exits exist
SECURITY

- Physical Barriers: (Deter, Delay, Deny)
  - The perimeter fence is constructed of cyclone style chain link
  - The gate in the NE corner is constructed of 2" cyclone style chain link with razor coils on top
  - The chain link has an opening of 1" in some places and 2" in other places
  - There are 7' chain link fences with 1' of triple strand barbed wire mounted on top on the North, East & South perimeter sides
    - These three sides are top mounted to a concrete retaining wall with a varying height between 6' & 9'
  - The barbed wire is on outriggers that face inside the yard
  - The barbed wire shows sign of aging and is loose in some areas

- Cameras (Detect & Assess)
  - There is 1 visible [assumed] PTZ camera located on the SW corner of the building
  - The serviceability of the camera is unknown

Switchgear building

- The building has one door for entry/exit and is alarmed
- There are two vents; one on each East and West end
- The North side of the building is integrated as part of the perimeter
  - The rooftop has no perimeter security measures

OBSERVATIONS & RECOMMENDATIONS

**OBSERVATION:**
- Obvious signs of graffiti are a common theme
  - TSS Example

**OBSERVATION:**
- The gate is a manual swing type (outward)
  - Cyclone style 1” chain link fabric
  - Two E-Key padlocks
  - Razor coil with barbed wire on top
  - Located on the corner of two fictitious streets
  - Gate is secured to concrete retaining walls
  - Leads to a driveway with a slight incline into the yard (note the snow build-up)

**RECOMMENDATION:**
- Install vibration sensing technology on gate
- Maintain camera coverage on the gate

**OBSERVATION:**
- Hinge bolts are accessible from outside the gate
  - The U-bolt has a spot weld but the other components are not

**RECOMMENDATION:**
- Replace nuts with break-away style nuts
- Spot weld all components of the hinge

**RECOMMENDATION:**
- Install cameras in order to identify criminals
- Follow through with prosecution
OBSERVATION:
- The proximity of the pole creates a climb-over vulnerability
- Exposed conduit supplying electricity to the light on this pole
- The top of the fence is approximately 12' from ground level due to the height of the retaining wall

RECOMMENDATION:
- Remove the pole or install anti-climb
- Re-route the conduit on the inside of the perimeter
- Retain fence height of 7', with installation of new fence

OBSERVATION:
- What appears to be a relic newsstand is taking up the SE corner of the yard and creating an extra 900 corner
- The rooftop allows access to the perimeter fence for a potential climb over

RECOMMENDATION:
- Remove the newsstand or raise the height of the new fence material in this area
- Eliminate this inside corner

OBSERVATION:
- The Southern perimeter fence
- 6'-8' concrete retaining wall
- 6'+1' Cyclone style chain link fence fabric
- Outriggers securing triple strand barbed wire faces inside the yard

RECOMMENDATION:
- Maintain fence height with expanded metal fabric & Y shaped outriggers and razor wire
- Maintain camera coverage along this border as well as the bridge on the SW corner

RECOMMENDATION:
- Install vibration sensing razor coil across rooftop with camera coverage
- Install new fence to the height of the building
- Install vibration sensing technology on new fence
OBSERVATION:
- This grate is a sufficient security measure but the installation points are vulnerable to being cut off
- Removing this grate and vent will allow an intruder to bypass the entry/exit door alarm

RECOMMENDATION:
- Re-engineer the grate with anchors inside the building
- Install alarm on the vent
  - Switch or camera
  - This should be installed on each end of the building

OBSERVATION:
- This corner connects two different height fences
- The razor wire is not sufficient to secure this corner
  - This is repeated at the NW & SW corners of the perimeter

RECOMMENDATION:
- Install a brace from tall fence to lower fence and secure razor wire to the brace
- Install vibration sensing technology to new fence

OBSERVATION:
- The large ellipse shows loose triple strand barbed wire typical of the rest of the perimeter of this site
- It also shows the outriggers facing inward
- The small ellipse points out an orange road cone on top of the relic newsstand. This newsstand creates a sturdy platform for an intruder to stand on

RECOMMENDATION:
- Install Y type outriggers
- Remove relic newsstand
- Install vibration sensing technology to new fence

OBSERVATION:
- View of the inclined driveway from inside the yard to the only vehicle gate
- The manual, dual swing gate opens outward

RECOMMENDATION:
- Consult engineers for potentially reducing the incline
**OBSERVATION:**
- A view of the gate locking mechanisms and hinge points
- Gate is secured by two E-Key type padlocks
- The U Bolts are only spot welded to the anchor post and the nuts are accessible from the outside

**RECOMMENDATION:**
- Update locking mechanisms to Utility Owners standards
- Replace nuts with break-away style nuts
- Spot weld all components of the hinge

**OBSERVATION:**
- A climb over vulnerability exists where the gate meets the fence (right side of picture)
- Due to inward facing outriggers, a climb over vulnerability exists where the fence meets the building
- There are no security measures across the rooftop of the building
- The vent can easily be bypassed by cutting off the bolts that secure the grate

**RECOMMENDATION:**
- Install vibration sensing technology on gate
- Maintain camera coverage on gate
- Install razor coil across rooftop with microwave
- Install new fence to the height of the building

**RESPONSE INFORMATION**

**UTILITY OWNER:**
- There is no expected response by the Utility Owner’s employees or security personnel to intervene during a criminal act
- If on-site, there is an expectation for the Utility Owner’s employees or security personnel familiar with this site to challenge new faces or personnel not displaying a Utility Owner’s badge

**LOCAL LAW ENFORCEMENT:**
- It is unknown at this time if a memorandum of agreement (MOA) between the local law enforcement agency and Utility Owner exists for this site
- An MOA with LLEA is considered classified information and should be withheld from public disclosure
- The MOA should be reviewed every 12 months

**SECURITY STRATEGY**

**Strategy Goals:**
- Provide sufficient deterrence to potential intruders by installing physical security upgrades such as fencing, vibration detection, barbed and razor wire as well as other technologies
- Provide sufficient detection of determined intruders
- Provide sufficient assessment capabilities to Exelon Security Operations Center (ESOC) operators so they may take appropriate steps to mitigate criminal acts and collect evidence to prosecute
- Provide sufficient delay that allows ESOC sufficient time to take appropriate actions in beginning response procedures
- Notify authorities to respond per the MOU between LLEA and ComEd

**PERIMETER**

- Clear all brush around perimeter to limit concealment opportunities
- Install an 11’ fence with 1’ barbed wire where appropriate around the entire perimeter
- Ensure the outriggers are “V” type and/or face outward
- Identify all underground penetrations (UP) over 962” that would allow access to the inside of the yard from outside the perimeter
**PERIMETER EQUIPMENT**
- Emplace proper signage along fence line at predetermined spacing
- Install vibration sensing technology on all perimeter fences
- Install analytic cameras along perimeter that detect at least 6’ outside perimeter
  - Tie the PTZ cameras to alarms and with slew-to-cue technology
- Install PTZ cameras in places that allow the most situational awareness

**INTERNAL EQUIPMENT**
- Install PTZ cameras near control buildings and/or towards the center of the yard that allow
  the most situational awareness.
  - Tie the PTZ cameras to alarms with slew-to-cue technology
- Install lighting as per the light discipline requirements
- Adhere to light discipline rules for Example County
- Install alarms to entrances (doors, windows, vents) of all buildings
- Install PTZ’s in critical areas within buildings watching sensitive equipment
- Passive IR sensor technology will increase detect ability inside buildings
- Install loudspeakers that allow emergency management personnel to communicate to yard
  personnel or intruders

**ACCESS POINTS**
- Maintain dual E-Key hardened locks with this manual, dual-type swing gate as well as calling
  security prior to entering this site by all Utility Owner’s employees
- Add or remove vehicle gates, as necessary, during reconstruction of perimeter fences
  - Install vibration sensing technology to primary and secondary vehicle entrance gates

![Diagram of perimeter and internal equipment setup]
CHALLENGES UNIQUE TO THIS SITE

OBSERVATION:
• The gate is approximately 20’ from the roadway leaving almost no room for a Utility Owner vehicle to keep clear of traffic while entering the site

RECOMMENDATION:
• Install automatic gate opener
• Operate through Security Operations Personnel or RF signal
  - A typical proximity reader may not be feasible at this location

OBSERVATION:
• Access for construction vehicles may be restricted to two RR bridges (vehicle pas sageways) or from the inside of the yard
• Very limited vehicle maneuverability & construction material storage

RECOMMENDATION:
• Coordination with RR company may be required

ADDITIONAL CONSIDERATIONS

GUNSHOT THREAT
There are historical accounts of random gunshots from the Interstates, secondary roads as well as rural and populated areas alike
  - These reports are not specific to this yard and most were reported as “random” acts at multiple locations across America but the threat absolutely exists

VEHICLE THREAT
There is potential a vehicle could be used to breach the perimeter fence
  - A 2” cable vehicle barrier around the perimeter would minimize this threat

VEHICLE THREAT
There are no historical reports of break-ins or criminal acts specific to this site
- 6 and 12-month walk-downs
- Coordinated Operations & Security walk down
- Warranty review on any new security upgrades and technology prior to warranty expiration
- Alarm point analysis
  - Periodic tests of the alarm systems functionality should be conducted

The following list represents the security measures that meet requirements for a Utility Owner's Security Enhancement Project that should be followed, as they relate to the six main security principles listed in the beginning of this report.

- Fencing @ 11'+1' (11' of Expanded Metal + 1' of six strand barbed or a roll of razor wire in a "V" shape)
- Vegetation clearance @ 10’ minimum- ground to sky around the entire perimeter
- Gates- Powered & non-powered vehicle gates plus man gates w/ alarm points
- Roof Protection- 1 roll of barbed coil sensing wire across any roof surface that doubles as the perimeter
- Locks/ Chains- Case hardened locks and chains if utilized on vehicle or man gates
- Signs- No Trespassing signs along perimeter at predetermined spacing
- Perimeter Detection- Dual layer- BRAND w/ analytics as primary
- Yard Microwaves- “Trip wire” type microwaves create spot detection zones and/ or protect critical or sensitive equipment
- Vibration Sensing technology- Double strand fiber to detect climb and/ or cut
- Perimeter Cameras- BRAND (fixed) on inner fence (primary) as well as BRAND or IR/ Color (PTZ) fills gaps and orients to alarm zones as well as maintaining situational awareness
- Yard Cameras- Thermal PTZ (dual head thermal – color) cover interior of yard
- Gate Cameras- Fixed IR
- Super Posts- Super Posts can handle many technology components. NOTE: If the super post performs a dual function to mount cameras and a gatepost, movement in the gate may cause a disruption in camera view or contribute to loosening camera or other technology mounting brackets.
- Control House Cameras- Fixed IR
- Video Recording Device- Located on-site with sufficient storage for the amount of cameras and retained data for a predetermined time period
- Control House- Alarmed (doors, vents windows, fixed video, passive IR) w/ alarm transmission redundancy
- Power Back-up- A minimum of 8 hours of Uninterrupted Power Supply (UPS) to retain power to critical security components

TIERED REQUIREMENTS TO BE APPLIED TO THIS SITE

FUTURE ASSESSMENT NEEDS OF SITE FOR EMERGING RISKS

APPROVAL

We approve the project as described above, and authorize the team to proceed.

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