Case Study

Kowloon-Canton Railway Corporation Threat and Vulnerability Assessment

Context

All facilities face a certain level of security risks associated with various threats, which may be in the form of natural events, accidents or intentional acts. To ensure the Kowloon-Canton Railway Corporation (KCRC) security risks are mitigated for its facilities and assets (which were operated to sustain an average daily ridership of about 1.5 million passenger trips in 2005), risks were determined in order to control the security risks from threats to facilities and personnel through a systematic and structured programme plan.

Atkins was commissioned by the KCRC to undertake a Threat and Vulnerability Assessment for its operating rail lines and key associated assets. Atkins' role was to evaluate the security risks associated with each of the KRCR key assets, which are closely related to transport operation activities. Atkins analysed the Business Continuity systems in place as part of this study to provide a holistic review.

Method

The assessment approach was based upon a United States Guideline 'The Public Transportation Security and Emergency Prepardedness Planning Guide', and inlcuded the follow phases

- Identification of all KCRC assets
- Threat scenarios assessment for all KCRC assets via workshops and site visits
- Risk ranking and identification of the top 10% of critical assets with highest security risk
- Identification of preventative measures, post-incident measures and recommendations for the top 10% key assets with respect to how to manage security threats.

The following list summarises the KCRC lines and assets covered under the assessment:

- East Rail – 46.5km, 25kV electrified, 22 stations, 900,000 passengers per day
- Ma On Shan Rail – 11.4km, 25kV electrified, 9 stations
- West Rail – 30.5km, 25kV electrified, 9 stations
- Light Rail – 36km, 750V electrified, 68 stops, 300,000 passengers per day
- KCRC Bus Services and Bus Depots
- Ho Tung Lau Maintenance Centre
- Taiwan Maintenance Centre
- Pat Heung Maintenance Centre
- Tuen Mun Maintenance Centre
- Beacon Hill Tunnel, Kwai Tsing Tunnel, Tai Lam Tunnel

Upon completion of all assessment activities, the results were assimilated in the form of a presentation and a final report for submission to the KCRC with recommendations on how to improve the security integrity of the KCRC critical assets.

Client Issues

- Perceived weakness in detection processes and associated security risks.
- The need to identify gaps from the existing state of preparedness and the desired state.
- Determine and align the appropriate response level to the actual threat.

Atkins Solutions and Added Value

Services Provided

- The evaluation of security risks and the establishment of credible and non-credible security risks.
- Analysis of Business Continuity systems to ensure the effective integration of plans across operational units.
- Threat and vulnerability assessment for all mission critical services and assets.

Key Benefits and Success Factors

- Improved detection/mitigation practices.
- Identification and recommendations on improved asset security integrity.
- Alignment of resilience framework to identified security risks.

Contract Data

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