



A Zero Injury Tolerant Design Modification of a Live-Fire Range

Prepared by
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Stephen D. Fraser

- Stephen (Steve) D. Fraser, a native of North Carolina, relocated to South Carolina with his parents during the early construction years of the Savannah River Site. After serving four years in the USAF as an Airborne Navigation Systems Technician, he completed his Bachelor of Science Degree in Mechanical Engineering at the University of South Carolina.
- From 1974 until early retirement in 2002, Steve was employed at SRS in a variety of assignments including Reactor Control Room Supervisor, Reactor Senior Supervisor, Reactor Shutdown Coordinator, Chief Supervisor of Rigging, Trucking and Crane Operations, Long-Range Planner for DOE Nuclear Materials Complex, Adversary Barrier Designer & Breaching Analyst, Design Authority Engineer for Safeguards and Security Projects.
- In 2004, Steve returned to SRS as Manager of the WSI-SRS Infrastructure Projects Department.



Range Consolidation Planning

- WSI-SRS Long-Range Plan Initiated 2007
 - Consolidate live-fire training functions conducted at Small Arms Training Academy (SATA) with Advanced Tactical Training Academy (ATTA) since 2007.
 - Began conceptual layout
 - Began analysis of impacts, hazards: required upgrades
- American Recovery and Reinvestment Act
 - SATA offered up for D&D late 2009
 - ATTA upgrades to transfer all SATA functions to ATTA
 - Plan to complete ATTA upgrades before SATA D&D
 - Customer requested SATA D&D start June 2010



Early SATA D&D Impacts ATTA Operating Hazards Introduced

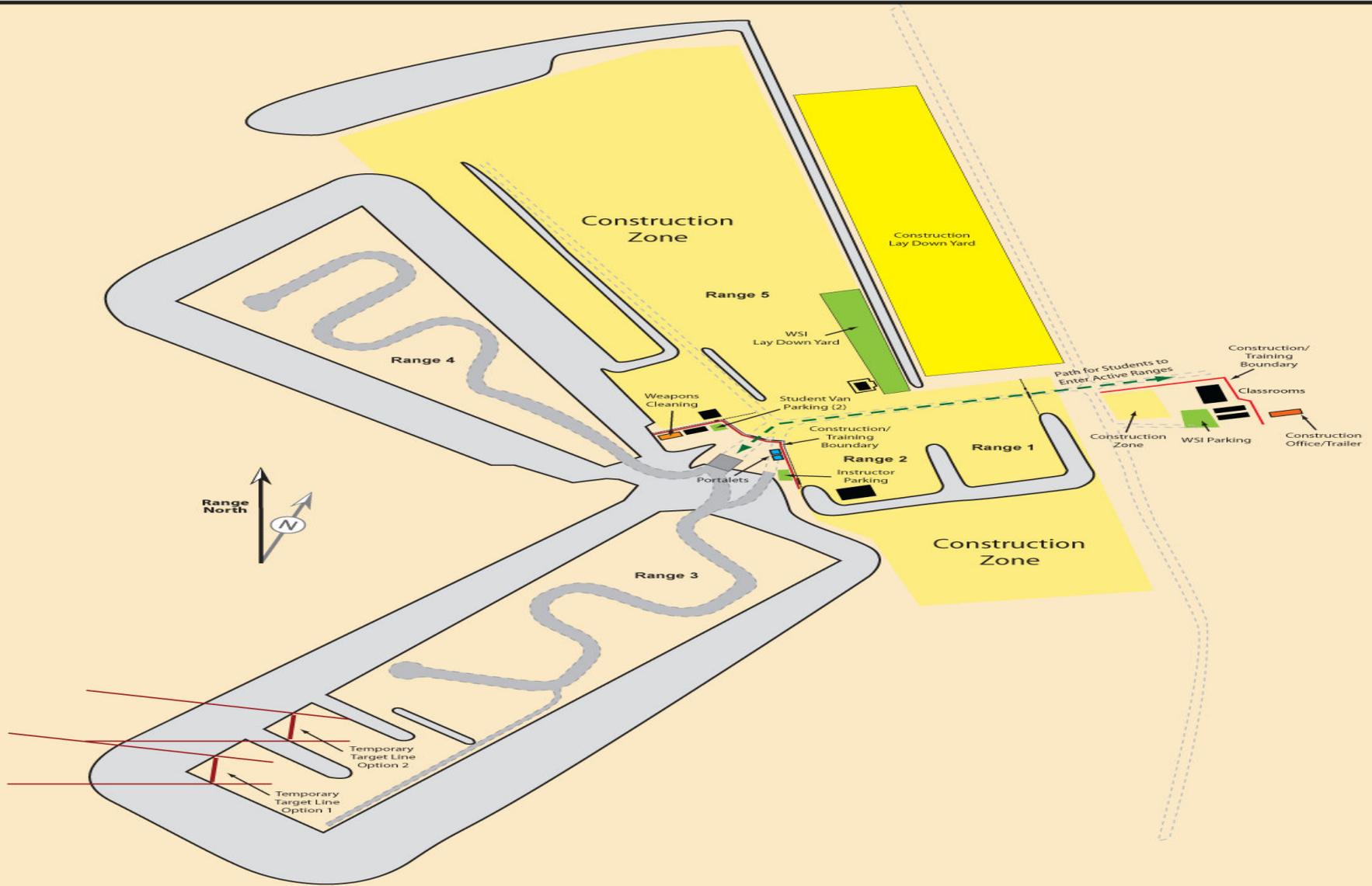
- Armed personnel conduct live-fire training concurrent with construction
- Construction personnel work in live-fire zones
- ATTA becomes a holding yard for equipment relocated from SATA
- ATTA personnel transport frequency increased
- ATTA access road and ranges become traffic congested
 - Increased live-fire trainees
 - Increased arms, ammunition deliveries
 - Frequent construction material delivery
 - Heavy earthmoving equipment
 - Crane operations



Operating Hazard Mitigation

- SATA to ATTA Safety Transition Plan implemented concurrent with SATA D&D
- Armed personnel conduct live-fire training concurrent with construction
 - Segregation of construction work zones from live-fire ranges
- Construction personnel work in live-fire zones
 - Live-fire zones redirected away from construction zones
- ATTA becomes a holding yard for equipment relocated from SATA
 - Separate holding yards for WSI, construction identified
- ATTA access road and ranges become traffic congested
 - Increased live-fire trainees
 - Increased arms, ammunition deliveries
 - Frequent construction material delivery
 - Heavy earthmoving equipment
 - Crane operations
- Separate access roads identified for WSI, construction personnel and equipment

Segregated Zones



Bobby Davis Range (BDR) Diagram - May 2010 (rev. 0)



Title II Design Hazard Mitigation

- Live-fire rounds escape range
 - Impact and side berms configured to contain rounds
- Live-fire rounds ricochet and strike trainee
 - Target materials and placement designed to reduce potential
- Public Address System allows cross-range command and control errors
 - Public address system dedicated for each range – directional broadcast

Nothing We Do In Training Or Operations Is Worth One Single Life Or Serious Injury

