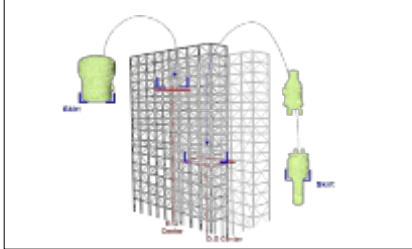
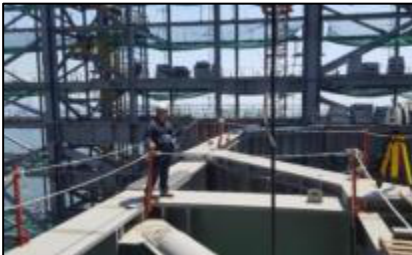



 S-OIL RUC Project

No	Item	Note	Photo
1	Task	Worlds first application of Laser Scan & Analysis of HS-FCC Vessel Units during fabrication and installation	 <p><HS-FCC Vessels></p>  <p><Vessel 3D Scanning></p>  <p><Vessel Location Verification></p>
2	Inspection Object	Large 3 Vessels and to be installed structure (105m high)	
3	Work Scope	<ul style="list-style-type: none"> • HS-FCC Vessels (Regenerator, Disengager, Withdrawal Well) & Structure (About 105m) • Static Equipment Dimension during/after the fabrication (Including DFR Nozzles Plumbness, Skirt Levelness) • To be installed Structure Dimension – Verification of Equipment Setting area • Run Equipment Installation Simulation and check to be installed equipment setting condition <ul style="list-style-type: none"> - Vessel –Structure’s Bolt Hole Alignment/Clash Check/Best Setting Position Guide • Verticality verification after HS-FCC Vessel Installation • Gantry Crain location marking for installation 	
4	Execution Time	<ul style="list-style-type: none"> • Total : 11 surveys (Dec,2017~Aug, 2018) • 1~2days/1 survey 	
5	Result	<ul style="list-style-type: none"> • The world first’s successful case of utilizing the laser scanning technology to the new type of HS-FCC Vessel fabrication and installation. • All errors caught Minimized the extra works and safety hazard during the installation • Single Weld Hook Up achieved flawlessly 	