Bald Mountain Telecom Site QA Checklist

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		Initial	Date	NOTES
DRAWINGS/PLANS	Correct Drawing up to date/Note Rev. Level			
	No red lines			
TELECOM SHELTER	Shelter level and secure to footings			
	Cable Wall Entry port installed on East wall of shelter, near shelter door			
	Cable Trays installed where indicated by drawings, secured to shelter ceiling			
	DIN rail mounted to interior shelter wall below cable entry ports			
	Main Ground Bus Bar installed on interior shelter wall below cable entry ports			
	Exterior Ground Bus Bar installed on exterior shelter wall below cable entry ports			
	Air intake hood installed on southwest corner of shelter per drawings, near ceiling			
	Exhaust hood installed on northeast corner of shelter per drawings, near ceiling			
	All wall penetrations are sealed			
ALL EQUIPMENT RACKS	Vibration Isolators installed on all four rack floor mount bolt locations for each rack			
	Racks securely bolted to floor via Vibration Isolators			
	Racks secured to shelter ceiling via hanger mount vibration isolators in two locations			
INTERIOR GROUND SYSTEM	Interior main ground bar bonded to exterior ground bar using #2 AWG green insulated ground wire			
	#2 AWG green insulated halo wire installed around west, north and east walls of shelter, secured 6" below shelter ceiling and bonded to the main ground bar beneath entry ports			
	Rack ground bars installed at top of all racks, bonded to halo wire or main ground bar using #6 AWG green insulated wire			
	Building steel bonded to main ground bar with #6 AWG green insulated ground wire			
	Building door frame bonded to main ground bar with #6 AWG green insulated ground wire			
	Cable trays bonded to interior ground system with #10 AWG green insulated ground wire			
	Ground resistance test complete to Main Ground Bar, results approved by owner			
RDS FIBERGLASS BASE	Foundation Level and in proper placement			
	Ballast, Sub-Ballast, and D1 fill all graded to avoid drainage problems			
	All Sections bolted, utilizing steel backer plates, lock washers, etc..			
	Marine Grade sealant used between all joints and plates			

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	All foundation feet backfilled and secure			
	Earthwork fill extends 10 feet beyond foundation in all directions			
EXTERIOR GROUND SYSTEM	#2 AWG copper ground ring installed around tower foundation, buried less than 30"			
	#2 AWG copper ground ring installed around shelter, buried less than 30"			
	Copper ground rods installed in 7 locations with ground wells per drawings			
	#2 AWG copper ground wire exothermically welded to exterior ground bar and shelter ground ring			
	Two (2) #2 AWG coopper ground wires exothermically welded to shelter ground ring and tower ground ring, buried less than 30"			
	Ground resistance test complete, results approved by owner			
TOWER	Tower properly bolted to RDS on all 4 legs, double-nut used			
	Tower level			
	All four Tower legs bonded and grounded to ground ring			
	Ground Plate installed on tower close to ice bridge			
	Climbing studs installed			
	Climbing fall arrestor cable system secure and installed properly			
PROPANE TANKS/PIPING/MANIFOLD	Propane tanks bolted on all 4 feet each			
	All propane tanks a minimum of 25 feet from shelter			
	Propane Tanks Bonded, Grounded to ground ring			
	Tank level sensors installed			
	All propane piping secured along RDS legs, no less than every 4'			
	LPG tank control valves installed, securely mounted to tower foundation			
	Piping is Black Pipe, until a transition to Yellow-Polly at end of RDS			
	Yellow Polly is completely buried, and at a depth of atleast 12" with warning tape buried at max. of 6"			
	Piping transitions back to Black pipe next to Comms Shelter			
	Black Pipe transitions down shelter, between 3" and 12" off ground			
	Shelter shut off valve installed on exterior of shelter near entry to shelter			
	Black Pipe enters rear of shelter (NE corner), entry sealed			
ICE BRIDGE ASSEMBLY	Wall mount brackets secured to shelter wall near cable entry ports			
	All wall penetrations sealed			
	4' Ice Bridge section installed via wall mount brackets			
	Non-penetrating ice bridge foundation level and in proper placement			
	Ballast, Sub-Ballast, and D1 fill all graded to avoid drainage problems			

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	Ice bridge attached securely to tower, tower foundation, ice bridge foundation and shelter wall mounts			
	Ice bridge runs level with shelter			
	Vertical cable ladder installed on tower near interface with Ice Bridge			
	Ice bridge assemblies and foundation bonded to exterior ground system			
ANTENNA INSTALLATION	Dish antennas installed on proper tower leg, aligned per the drawings			
	Antenna supports bonded to tower steel using ground wire			
	Radome covers installed and secured			
SOFC AND INTERIOR PROPANE PIPING	All devices installed between entry and SOFC per single-line diagram			
	2nd stage regulator vent line, 1" copper, installed and exit exterior wall at highest point			
	Vent line includes screen end cap and wall penetration sealed			
	SOFC part number matches BOM			
	SOFC Field Stand anchored to shelter floor			
	SOFC securely mounted to field stand			
	Minimum of 2 feet of clearance achieved between all sides of unit and shelter wall			
	All pipe connections are tight and sealed			
	Piping leak test performed, results approved by owner			
	SOFC exhaust duct secured to shelter ceiling, penetrates shelter on west wall near ceiling			
	Exhaust duct extends a minimum of 6" above shelter roof and supported to survive wind gusts rated for region			
	Exhaust is rain capped with bird screen and includes drip tube or hole for condensation			
INTERIOR EQUIPMENT	Battery rack anchored to the shelter floor			
	Battery charger rack assembly secured to battery rack			
	AC contactors securely installed			
	Baseboard heater installed and secured within shelter			
	Light switch timer installed near shelter entrance on east wall			
	All (qty. 4) four foot LED lights installed at ceiling-wall interface per drawings			
	Fire extinguishers mounted to wall near shelter entrance and AC distribution panel			
	Exhaust fan installed in north east corner of shelter			
	Intake fan and air filter installed in south west corner of shelter			
	Dehydrator and manifold installed near cable entry ports			

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	All rack mounted hardware securely mounted, all items included			
	Return bus bar is installed on rack #1 and protected with fiberglass shield			
	All rack mounted hardware chassis grounded to nearest ground bar using #10 AWG green insulated ground wire			
	Vinyl strip door kit installed, spans entire shelter door opening			
	Magnetic door sensor installed			
	Indoor temperature and humidity sensor mounted securely to rack			
	Surge protectors and DIN rail mounted to interior shelter wall beneath cable entry ports			
	Surge protectors bonded to main ground bar using #6 green insulated ground wire			
	Exterior temperature sensor installed on exterior of east shelter wall, wall penetrations sealed			
	Gasboss sensor securely mounted 6" from shelter floor, near propane piping and SOFC			
POWER AND WIRING	Measured battery voltage is -48 VDC			
	All wiring between equipment as shown in one-line diagrams			
	AC breakers installed, rated according to drawings			
	All AC supply wiring in EMT conduit, securely terminated at devices			
	Return bus bar bonded to the main ground bar using green insulated #2 AWG ground wire			
	All Power Distribution Panel breaker ratings confirmed			
	All DC power wiring installed in red EMT conduit			
	Junction box for LPG tank sensor and valve control wiring secured to tower foundation			
	LPG Valve control and Tank Sensor wiring routed from equipment to junction box in RGS conduit			
	Wires routed from junction box to shelter through RGS conduit suspended from ice bridge			
	All conduit joints are sealed			
	Conduit is secured to tower foundation and ice bridge assembly			
	LPG Valve control and Tank Sensor wiring routed from entry port to surge protectors, surge protectors to equipment per one-line diagrams			
	Tags w/wire name correct per drawings			
	Cable and wire Tested and Terminated recorded			
	Correct voltage confirmed at all equipment power supply inputs			
	As installed panel schedules provided by contractor			
	Baseboard heater test performed, results approved by owner			

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RF CABLES	All cables and waveguides run straight, with no cross-overs			
	All cables and waveguide adhere to manufacturer minimum bend radius specifications			
	All cables and waveguides secured no less than every 4'			
	All coaxial cables include surge protection on interior side of cable entry port into shelter			
	Surge protectors bonded to Main Ground Bar with #6 AWG green insulated ground wire			
	All waveguide outer conductors are grounded to Main Ground Bar at Cable Entry into shelter			
	All waveguide connected to dehydrator, all joints sealed			
	All waveguide and cable outer conductor bonded to Tower Ground Bar at Tower-Ice Bridge interface			
	All RF connectors tight			
	All waveguide and cable tightly connected to antenna interface			
	VSWR test performed, results approved by owner			
	All waveguide penetrations through cable entry port sealed			
	Waveguide pressure test performed, results approved by owner			
NET MONITORING	All equipment configured with correct network settings			
	Connectivity established with back office over radio links			
	Sensor functionality confirmed for all newly installed sensors, correct status telemetry reported to back office			
	Control command functionality confirmed for all newly installed control devices			
	Event response tests performed to simulate the following: Empty propane tank, loss of SOFC power, tripped breakers			
PTC	All pieces of transmission line have VSWR less than 1.7:1			
	GPS antenna system functioning and 220 radio has satellites available			
FINAL QA/QC INSPECTION	Overall visual inspection of site			
Name, Signature and Date of ALL persons Initialing:				
_____				

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_____				
Final Completed Copies Go to:				
Contractors Rep				
ARRC Project Manager				
ARRC Telecom				