STATEMENT OF NEED
Transition Power Source for the NEXRAD Weather Radar

Background
The National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS) operates 158 Next Generation Weather Radars (NEXRAD) across the country. These radars depend on electrical power to operate. The electrical power generally comes from the commercial power grid. The power grid is susceptible to power fluctuations due to a variety of factors including weather and other customers. The current Transition Power Source (TPS) is a four wire, three phase, dual conversion, and 50KVA uninterruptible power supply that supplies clean power to the WSR-88D NEXRAD radar. The TPS also supplies the power to the radar while transitioning between utility and generator power during a power outage. The TPS also conditions power to prevent damaging NEXRAD equipment during power surges and brownouts. The TPS is composed of three different parts: the Uninterruptible Power Supply (UPS), the battery cabinet, and the maintenance bypass switch. The NEXRAD has two different versions of the TPS. One version has a maintenance bypass switch on the wall and the other has the maintenance bypass switch as a "side car" attached to the UPS. The current TPS uses a Supervisory Contact Module (SCM) that interfaces the UPS to the building alarms. These alarms include hydrogen detection, 80 degree Fahrenheit, and a 90 degree Fahrenheit temperature signal.

Discussion
The Transition Power Source (TPS) for the NEXRAD needs to be replaced due to obsolescence. The current TPS is 20 years old and is no longer manufactured, sold, or maintained by the original manufacturer. A replacement for the TPS is needed in order to keep the NEXRAD operational during storms, power surges and outages.

Before the removal of the legacy TPS, the Government representative(s) on site shall conduct a two-hour pre-operational check to ascertain the status of the Radar and document any existing alarms prior to the commencement of work. Following the installation of the new TPS, the Government representative(s) shall execute a three-hour post-installation check, which encompasses both manufacturer acceptance tests and ROC acceptance tests. The contractor is required to remain on-site for the duration of both the pre- and post-installation checks. These checklists are available in ROC Modification Note 242.

Requirements:

CLIN 0001:
Eaton 93M UPS and MBM sidecar and Battery cabinet with batteries installed at the following locations:(See installation instructions below) QTY: TBD SEE EFFECTIVITY

Must meet the following requirements:
The Installation days cannot exceed 10 working hours
Life Cycle support
(1) Shall be repairable by the manufacturer or a vendor other than the manufacturer.
(2) Shall have a life cycle of at least 15 years.
(3) Shall have maintenance documentation provided.
(4) Shall have a training program for maintenance available for a later date.

Power
(1) Shall be capable of receiving three phase, 208VAC power at 60 Hz without damage to the source.
(2) Shall supply three phase, 208VAC power at 60 Hz to the radar.
(3) Shall be an online double conversion Uninterruptible Power Supply (UPS).
(4) Shall be a four wire system: three power wires, a neutral, and a separate ground wire. The ground wire and neutral should be separated, or be separable.
(5) Shall be rated to supply at least 50 KVA of power.
(6) Shall have a total harmonic distortion (THD) of 5% or less.
(7) Shall have a 120 VAC NEMA 5-15R convenience outlet on the top of the UPS that is on conditioned output power.

Features
(1) Shall have a modular line replaceable unit (LRU) concept that can be field replaceable.
(2) Shall have the capability to isolate failures to the LRU.
(3) Shall have a modular LRU that can be individually procured.
(4) Shall have a screen able to display all alarms, failures, and vital information.
(5) Shall have programmable shut off capabilities.
(6) Shall have programmable bypass capabilities.
(7) Shall have an Eaton Industrial Gateway Card (INDGW-M2) that allows for external monitoring.
(7.1) The network card shall be removable.
(7.2) The network card shall be modular.
(8) Shall have an Eaton Industrial Relay Card (INDRELAY-MS).
(8.1) The relay card shall accept a minimum of 5 inputs.
(8.2) The relay card shall be modular.

Mechanical
(1) Shall not exceed a physical footprint of 96” H x 72” W x 52” D.
(2) Shall have a manufacturer’s clearance requirement of 96” H x 72” W x 92” D.
(3) Clearance requirements shall include 36” in front of the system.
(2) Shall have a top cable entry.
(4) Shall have an operating temperature of 10 - 40 C.
(5) Shall be capable of operating at a full rating of at least 50KVA up to an elevation of at 1500 meter (MSL).
(6) Shall be capable of operating at a relative humidity of 20% - 80%.

Battery Cabinet
(1) Shall hold forty (40) 12 volt batteries.
(2) Shall be capable of holding a 20KW load for a minimum of 30 minutes.
(3) Shall be designed to mechanically and electrically connect to the UPS.
(4) Shall be connected to the UPS Maintenance Bypass Module (MBM) on the right side of the UPS MBM.

Maintenance Bypass Module
(1) Shall allow for top cable entry.
(2) Shall be mounted on the right side of the UPS.
(3) Shall be capable of connecting to the battery cabinet.
(4) Shall have three breakers that allow the input power to bypass the UPS.
(5) Shall be designed so that when placed into the bypass, power to the radar is not interrupted.

(6) Shall have an input shunt trip breaker.

Earthquake Protection
(1) Shall come with all necessary hardware to secure the UPS from earthquakes.

Documentation
(1) Vendor shall secure the rights from Eaton to publish the Eaton Maintenance manual on the Radar Operations Center Website.

CLIN 0002:

Eaton 93PM UPS and MBM sidecar and Battery cabinet with batteries installed at the following locations:(See installation instructions below) Qty: TBD SEE EFFECTIVITY

Must meet the following requirements:
The Installation days cannot exceed 10 working hours
Life Cycle support
(1) Shall be repairable by the manufacturer or a vendor other than the manufacturer.
(2) Shall have a life cycle of at least 15 years.
(3) Shall have maintenance documentation provided.
(4) Shall have a training program for maintenance available for a later date.

Power
(1) Shall be capable of receiving three phase, 208VAC power at 60 Hz without damage to the source.
(2) Shall supply three phase, 208VAC power at 60 Hz to the radar.
(3) Shall be an online double conversion Uninterruptible Power Supply (UPS).
(4) Shall be a four wire system: three power wires, a neutral, and a separate ground wire. The ground wire and neutral should be separated, or be separable.
(5) Shall be rated to supply at least 50 KVA of power.
(6) Shall have a total harmonic distortion (THD) of 5% or less.
(7) Shall have a 120 VAC NEMA 5-15R convenience outlet on the top of the UPS that is on conditioned output power.

Features
(1) Shall have a modular line replaceable unit (LRU) concept that can be field replaceable.
(2) Shall have the capability to isolate failures to the LRU.
(3) Shall have a modular LRU that can be individually procured.
(4) Shall have a screen able to display all alarms, failures, and vital information.
(5) Shall have programmable shut off capabilities.
(6) Shall have programmable bypass capabilities.
(7) Shall have an Eaton Industrial Gateway Card (INDGW-M2) that allows for external monitoring.
(7.1) The network card shall be removable.
(7.2) The network card shall be modular.
(8) Shall have an Eaton Industrial Relay Card (INDRELAY-MS).
(8.1) The relay card shall accept a minimum of 5 inputs.
(8.2) The relay card shall be modular.

Mechanical

(1) Shall not exceed a physical footprint of 96” H x 72” W x 52” D.
(2) Shall have a manufacturer’s clearance requirement of 96” H x 72” W x 92” D.
(3) Clearance requirements shall include 36” in front of the system.
(2) Shall have a top cable entry.
(4) Shall have an operating temperature of 10 - 40 C.
(5) Shall be capable of operating at a full rating of at least 50KVA up to an elevation of at 1500 meter (MSL).
(6) Shall be capable of operating at a relative humidity of 20% - 80%.

Battery Cabinet
(1) Shall hold forty (40) 12 volt batteries.
(2) Shall be capable of holding a 20KW load for a minimum of 30 minutes.
(3) Shall be designed to mechanically and electrically connect to the UPS.
(4) Shall be connected to the UPS on the right side of the UPS.

Maintenance Bypass Module
(1) Shall allow for bottom cable entry.
(2) Shall be mounted on the left side of the UPS.
(3) Shall have three breakers that allow the input power to bypass the UPS.
(4) Shall be designed so that when placed into the bypass, power to the radar is not interrupted.
(5) Shall have an input shunt trip breaker.

Earthquake Protection
(1) Shall come with all necessary hardware to secure the UPS from earthquakes.

Documentation
(1) Vendor shall secure the rights from Eaton to publish the Eaton Maintenance manual on the Radar Operations Center Website.

CLIN 003:
Eaton 93M UPS and sidecar w/MBM and Battery cabinet without batteries shipped to the National Logistics Support Center. (NO INSTALLATION) Qty: Max of 3

SHIP TO:
National LogisticsSupport Center
14200 Merritt Rd.
Grandview, MO 64030

Installation Instructions of CLIN 001:

Installation

The on-site government personnel will run a pre-installation check to verify the status of the radar. The two-hour pre-installation checks are referenced in ROC Modification Note 242, Attachment 1. The contractor is required to observe the pre-installation check. Any alarms present on the radar shall be documented; however, they will not impede the commencement of the UPS installation.

The contractor shall (1) travel to each radar site in the site effectivity list and shall (2) remove and (3) dispose of the old UPS in accordance with standard practices and regulations and shall install the new Unit.

Power Off old UPS

- **Legacy UPS without the integrated Maintenance Bypass (See site effectivity list for site details)**
    - power the old unit down.
        - TPS Control Panel UD62A6
            - Turn Mode switch to bypass. Wait for ups to go to internal bypass.
            - Turn Battery switch to the OFF position.
            - Turn CB1 to OFF position.
        - Turn UD63CB1 breaker to the OFF Position.
        - Turn UD61A5S2 (or UD61A105S2 depending on the TPMS shelter configuration) Maintenance Bypass Fused Disconnect breaker to the ON position.
        - Turn UD61A5S3 Generator output Fused Disconnect to the OFF position.
        - Turn UD61A5S1 Motor Input Fused Disconnect to the OFF position.
        - Apply lockout/tagout to the input (UD61A5S1) and output (UD61A5S3) switch.
        - Verify no voltage on UPS side of the input (UD61A5S1) and output (UD61A5S3).
    - Power the radar down to disconnect the TPMS shelter from the utility power in order to run the input and output power cables.
    - Turn the UD10TPS1 Fused Disconnect to the OFF position and apply lockout/ tagout.

Disassembly old UPS

- Remove communication cables that run from UPS's TB1 to the Alarm termination panel, the hydrogen Detector, and the high temp sensor that are on the shelter wall.

TB1 pin number	Cable Label	SIgnal name
1	CC32-1	Generator ON
2	CC32-2	Generator ON (rtn)
3	BB5-1	Hydrogen Detector
4	BB5-2	Hydrogen Detector (rtn)
5	CC32-3	On Maintenance Bypass
6	CC32-4	On Maintenance Bypass (rtn)

7	BB5-3	High temp (90)
8	BB5-4	High temp (90) (rtn)

- Disconnect the input (E13,E14,E15) and output (E9, E10,E11) power wires and the neutral and ground wires.
- Disconnect the Battery power wires.
- Remove the batteries from the battery cabinet.
- Disconnect the battery cabinet from the UPS.
- Remove the battery cabinet from the shelter.
- Remove the UPS from the shelter.
- Remove the input and output power wires from the TPS including the neutral and ground wires.
- Remove or ensure the floor surface has no protruding bolts used to secure cabinets to the floor.

The contractor shall dispose of the old unit according to local requirements. All batteries shall have a certificate of disposal.

The contractor shall remove the Supervisory Contact Module (SCM) from the wall, remove all of the associated cables, remove the associated 1” conduit labeled CC31, and plug the hole. Cables CC31-1 through 27 will be removed from the shelter.

The contractor shall remove the 3/4” conduit labeled BB34 and plug the hole in the junction box.

Install the new unit

The contractor shall remove any debris after the removal of the old unit.

The contractor shall place the new unit into the TPS shelter. The contractor will need to provide the capability to transport the UPS over #57 crushed stones that make up the parking lot and area surrounding the shelter. There is a concrete sidewalk that exists between the shelters; it is approximately 48 inches wide. The shelter doors are approximately 48 inches wide and approximately 6 inches off the ground. The unit will need to be lifted straight up and can not be tilted more than 11 degrees off the vertical. The new unit comes in two pieces, the UPS/sidecar and the Battery cabinet. With the batteries installed, each cabinet weighs no more than 2200 pounds. Some sites may require the surrounding fence to be temporarily removed. Before the contractor leaves the site, they are responsible for replacement of the fence and any grounding or lightning protection cables that were removed or altered.

The contractor may remove the battery trays from the battery cabinet, but the batteries must stay in their trays. There are 8 batteries per tray and each tray weighs approximately 300 to 400 lbs.

The contractor shall run new input and output power wires. The wire shall be THHN or equivalent. Splicing the wires will not be allowed. There are five 4/0 AWG input power wires (three phases, neutral, and ground) and five 1/0 AWG output power wires (three phases, neutral, and ground). The wire runs will be approximately 30 ft long.

The power wires shall be terminated with a compression lug on the UPS MBM end.

The contractor shall install the unit in accordance with manufacturer instructions (see 93PM-L Installation and operation manual, part number P-164000711).

The contractor shall install seismic protection that comes with the unit.

The contractor shall move the Industrial Relay Card from minislot 4 to minislot 3.

The contractor shall run new red 600V 14 AWG THHN stranded communication cables from the Alarm termination panel, the hydrogen detector, and the high temperature sensor to the new UPS building alarms termination board and industrial relay card. The new communication cables shall be equipped with a crimp pin connector on the UPS end and a spade connector on the Alarm termination board end.

The contractor shall label the cables in table 1 and tables 2 with the labels provided to them by the Government.

Table 1

Building Alarm terminations on the UPS	Cable label	Alarm termination Panel	Signal Name	Action
10 - Bldg Alarm 1	60W1 (Type 1-7)	60A6 TB1-23	Generator ON	When the generator is ON the UPS limits battery charging capability
9 - Bldg Alarm 1	60W2 (Type 1-7)	60A6 TB1-24	Generator ON (rtn)	
8 - Bldg Alarm 2	60W7 (ALL)	60A6 RY2	Hydrogen Detector	Remote Go to Bypass
7 - Bldg Alarm 2	60W8 (ALL)	60A6 RY2	Hydrogen Detector (rtn)	
6 - Bldg Alarm 3	60W3 (Type1-7)	60A6 TB1-25	On Maintenance Bypass	Maintenance Bypass Enabled
5 - Bldg Alarm 3	60W4 (Type 1-7)	60A6 TB1-26	On Maintenance Bypass (rtn)	

4 - Bldg Alarm 4	60W9 (ALL)	60A2A8 Y	High Temp (90)	Remote Go to Bypass
3 - Bldg Alarm 4	60W10 (ALL)	60A2A8 R	High Temp (90) (rtn)	

The contractor shall connect relay signals for UPS in Maintenance Bypass and System Normal.

Table 2

IRC relay	Cable label		Signal Name	Action
K1 Normal Open	60W11	60A6 TB1-19	System Normal	When UPS is in bypass K1 deactivates causing an open on pins 19 & 20 of TB1 in the alarm termination cabinet This action can be completed by ensuring Relay 1 of Minislot 3 has an activation event code of 262 “On Line LED Is Lit”
K1 COM	60W12	60A6 TB1-20	System Normal (rtn)	
K4 Normal Open	60W5	60A6 TB1-17	System Normal	When UPS is in bypass K4 deactivates causing an open on pin 17 & 18 of TB1 in the alarm termination cabinet. This action can be completed by ensuring Relay 4 of Minislot 3 has an activation event code of 262 “On Line LED Is Lit”
K4 COM	60W6	60A6 TB1-18	System Normal	

			(rtn)	

The contractor shall install a CAT 6 Ethernet cable that runs from the UPS, in the TPMS shelter, to the RDA in the RDA shelter.

- The cable length is approximately 100 feet.
- The cable shall be blue.
- The cable shall be shielded.
- The cable shall be plenum rated.
- The cable shall be straight through.
- Each end shall be terminated with an RJ45 module jack in accordance with the T568B wiring standard.
- The cables shall be labeled as W1010P1 on the UPS end and W1010P2 on the RDA end.
- The P1 end of the cable will be plugged into the Ethernet card (UD62A101A1) on the UPS and the P2 end will be connected to the RDA Cabinet 90CP14.

The contractor shall install a blue, shielded, plenum rated, straight through 10 ft cat 6 cable from 90CP14 to 90A5 2X and label it with the 90W913 cable label provided.

After the install, the contractor shall connect the unit to the power grid. No power is to be applied to the UPS until it has been commissioned by an Eaton Customer Service Engineer.

The contractor shall schedule a Eaton Customer Service Engineer to commission the UPS before power is applied to the unit.

The contractor shall ensure that the Eaton Customer Service Engineer assigns the correct labels and actions to the alarms and relays according to tables 1 and 2.

The contractor shall ensure that the Eaton Customer Service Engineer configures the network card with the correct IP address, network mask, and gateway according to table 3.

Subsequent to installation, the unit shall undergo comprehensive testing to validate both installation integrity and operational functionality. These tests will encompass manufacturer acceptance protocols and ROC acceptance procedures, collectively requiring a duration of three hours. The contractor is required to remain on-site until the satisfactory completion of all manufacturer and ROC acceptance tests and until formal Government acceptance of the new TPS is documented via signature on Attachment 2 of ROC Modification Note 242.

The contractor shall document any deviation from the standard installation in the as-built drawing. These drawings will be sent back to the Radar Operation Center after each install.

The contractor shall take before and after install digital pictures of each of the interior and exterior walls of the TPMS shelter.

The contractor shall take digital pictures of the unit without any of the protective covers on the front, including the top front of the unit where the communication cables are connected.

The contractor shall send all the digital photographs to the Radar Operation Center before the contractor leaves the site.

Installation instructions of CLIN 002:

Installation

The on-site government personnel will run a pre-installation check to verify the status of the radar. The two-hour pre-installation checks are referenced in ROC Modification Note 242, Attachment 1. The contractor is required to observe the pre-installation check. Any alarms present on the radar shall be documented; however, they will not impede the commencement of the UPS installation.

The contractor shall (1) travel to each radar site in the site effectivity list and shall (2) remove and (3) dispose of the old UPS in accordance with standard practices and regulations and shall install the new Unit.

Power Off old UPS

- **Legacy UPS with the integrated Maintenance Bypass**
    - power the old unit down.
        - TPS Control Panel UD62A6
            - Turn Mode switch to bypass. Wait for ups to go to internal bypass.
            - Turn Battery switch to the OFF position.
            - Turn CB1 to OFF position.
        - Turn UD63CB1 breaker to the OFF position.
        - Turn UD64CB2 MBB breaker to the ON position.
        - Turn UD64CB3 UOB breaker to the OFF position.
        - Turn UD64CB1 UIB breaker to the OFF position.
    - Power the radar down to disconnect the TPMS shelter from the utility power in order to run the input and output power cables.
    - Turn the UD10TPS1 Fused Disconnect to the OFF position and apply lockout/ tagout. Verify no voltage on UPS side of the Fused Disconnect.
    - Turn the UD7TPS1 Critical Equipment Contactor Coil Control Box Breaker to the OFF position and apply lockout/ tagout. Verify no voltage on UPS side of the Critical Equipment Contactor (7S6)

Disassembly old UPS

- Remove communication cables that run from UPS's TB1 to the Alarm termination panel, the hydrogen Detector, and the high temp sensor that are on the shelter wall.

TB1 pin number	Cable Label	SIgnal name

1	CC32-1	Generator ON
2	CC32-2	Generator ON (rtn)
3	BB5-1	Hydrogen Detector
4	BB5-2	Hydrogen Detector (rtn)
5	CC32-3	On Maintenance Bypass
6	CC32-4	On Maintenance Bypass (rtn)
7	BB5-3	High temp (90)
8	BB5-4	High temp (90) (rtn)

- Disconnect the input (E1,E2,E3) and output (E13, E14,E15) power wires from the MBM and the neutral and ground wires.
- Disconnect the input (E13,E14,E15) and output (E9, E10,E11) power wires from the UPS and the neutral and ground wires.
- Disconnect the Battery power cables.
- Remove the batteries from the battery cabinet.
- Disconnect the battery cabinet from the UPS.
- Remove the battery cabinet from the shelter.
- Remove the UPS from the shelter.
- Remove the input and output power wires from the TPS including the neutral and ground wires.

- Remove or ensure the floor surface has no protruding bolts used to secure cabinets to the floor.

The contractor shall dispose of the old unit according to local requirements. All batteries shall have a certificate of disposal.

The contractor shall remove the Supervisory Contact Module (SCM) from the wall, remove all of the associated cables, remove the associated conduit, and plug the hole. Cables CC31-1 through 27 will be removed from the shelter.

The contractor shall remove the 3/4” conduit labeled BB34 and plug the hole in the junction box. Not all sites may have this piece of conduit.

Install the new unit

The contractor shall remove any debris after the removal of the old unit.

The contractor shall place the new unit into the TPS shelter. The contractor will need to provide the capability to transport the UPS over #57 crushed stones that make up the parking lot and area surrounding the shelter. There is a concrete sidewalk that exists between the shelters; it is approximately 48 inches wide. The shelter doors are approximately 48 inches wide and approximately 6 inches off the ground. The unit will need to be lifted straight up and can not be tilted more than 11 degrees off the vertical. The new unit comes in two pieces, the UPS/sidecar and the Battery cabinet. With the batteries installed, each cabinet weighs no more than 2200 pounds. Some sites may require the surrounding fence to be temporarily removed. Before the contractor leaves the site, they are responsible for replacement of the fence and any grounding or lightning protection cables that were removed or altered.

The contractor may remove the battery trays from the battery cabinet, but the batteries must stay in their trays. There are 8 batteries per tray and each tray weighs approximately 300 to 400 lbs.

The contractor shall run new input and output power wires. The wire shall be THHN or equivalent. Splicing the wires will not be allowed. There are five 4/0 AWG input power wires (three phases, neutral, and ground) and five 1/0 AWG output power wires (three phases, neutral, and ground). The wire runs will be approximately 75 ft long.

The power wires shall be terminated with a compression lug on the UPS MBM end.

The contractor shall install the unit in accordance with manufacturer instructions (see 93PM-L Installation and operation manual, part number P-164000711).

The contractor shall install seismic protection that comes with the unit.

The contractor shall move the Industrial Relay Card from minislot 4 to minislot 3.

The contractor shall run red 600V 14 AWG THHN stranded communication cables from the Alarm termination panel, the hydrogen detector, and the high temperature sensor to the new UPS building alarms termination board and industrial relay card. The new communication cables shall be equipped with a crimp pin connector on the UPS end and a spade connector on the Alarm termination board end.

The contractor shall label the cables in table 1 and tables 2 with the labels provided to them by the Government.

Table 1

Building Alarm terminations on the UPS	Cable label	Alarm termination Panel	Signal Name	Action
10 - Bldg Alarm 1	60W1 (Type 1-7)	60A6 TB1-23	Generator ON	When the generator is ON the UPS limits

				battery charging capability
9 - Bldg Alarm 1	60W2 (Type 1-7)	60A6 TB1-24	Generator ON (rtn)	
8 - Bldg Alarm 2	60W7 (ALL)	60A6 RY2	Hydrogen Detector	Remote Go to Bypass
7 - Bldg Alarm 2	60W8 (ALL)	60A6 RY2	Hydrogen Detector (rtn)	
6 - Bldg Alarm 3	60W3 (Type1-7)	60A6 TB1-25	On Maintenance Bypass	Maintenance Bypass Enabled
5 - Bldg Alarm 3	60W4 (Type 1-7)	60A6 TB1-26	On Maintenance Bypass (rtn)	
4 - Bldg Alarm 4	60W9 (ALL)	60A2A8 Y	High Temp (90)	Remote Go to Bypass
3 - Bldg Alarm 4	60W10 (ALL)	60A2A8 R	High Temp (90) (rtn)	

The contractor shall connect relay signals for UPS in Maintenance Bypass and System Normal.

Table 2

IRC relay	Cable label		Signal Name	Action
K1 Normal Open	60W11	60A6 TB1-19	System Normal	When UPS is in bypass K1 deactivates causing an open on pins 19 & 20 of TB1 in the alarm termination This action can be completed by ensuring Relay 1 of Minislot 3 has an activation event code of 262 “On Line LED Is Lit”
K1 COM	60W12	60A6 TB1-20	System Normal (rtn)	
K4 Normal Open	60W5	60A6 TB1-17	System Normal	When UPS is in

				bypass K4 deactivates causing an open on pin 17 & 18 of TB1 in the alarm termination cabinet This action can be completed by ensuring Relay 1 of Minislot 3 has an activation event code of 262 “On Line LED Is Lit”
K4 COM	60W6	60A6 TB1-18	System Normal (rtn)	

The contractor shall install a CAT 6 Ethernet cable that runs from the UPS, in the TPMS shelter, to the RDA in the RDA shelter.

- The cable length is approximately 100 feet.
- The cable shall be blue.
- The cable shall be shielded.
- The cable shall be plenum rated.
- The cable shall be straight through.
- Each end shall be terminated with an RJ45 module jack in accordance with the T568B wiring standard.
- The cables shall be labeled as W1010P1 on the UPS end and W1010P2 on the RDA end.
- The P1 end of the cable will be plugged into the Ethernet card (UD62A101A2) on the UPS and the P2 end will be connected to the RDA Cabinet 90CP14.

The contractor shall install a blue, shielded, plenum rated, straight through, 10 ft cat 6 cable from 90CP14 to 90A5 2X and label it with the 90W913 cable label provided.

After the install, the contractor shall connect the unit to the power grid. No power is to be applied to the UPS until it has been commissioned by an Eaton Customer Service Engineer.

The contractor shall schedule a Eaton Customer Service Engineer to commission the UPS before power is applied to the unit.

The contractor shall ensure that the Eaton Customer Service Engineer assigns the correct labels and actions to the alarms and relays according to tables 1 and 2.

The contractor shall ensure that the Eaton Customer Service Engineer configures the network card with the correct IP address, network mask, and gateway according to table 3.

Subsequent to installation, the unit shall undergo comprehensive testing to validate both installation integrity and operational functionality. These tests will encompass manufacturer acceptance protocols and ROC acceptance procedures, collectively requiring a duration of three hours. The contractor is required to remain on-site until the satisfactory completion of all manufacturer and ROC acceptance tests and until formal Government acceptance of the new TPS is documented via signature on Attachment 2 of ROC Modification Note 242.

The contractor shall document any deviation from the standard installation in the as-built drawing. These drawings will be sent back to the Radar Operation Center after each install.

The contractor shall take before and after install digital pictures of each of the interior and exterior walls of the TPMS shelter.

The contractor shall take digital pictures of the unit without any of the protective covers on the front, including the top front of the unit where the communication cables are connected.

The contractor shall send all the digital photographs to the Radar Operation Center before the contractor leaves the site.

For all UPS within type 5-7 shelters, the Hydrogen Detector shall be plugged into the 120V convenience outlet on the top of the UPS cabinet. the contractor shall install 120V power to the Hydrogen detector in accordance with the National Electrical Code.

- The contractor shall install a 20A circuit breaker into the first slot in the UD60A5 power panel.
- The Hydrogen detector shall be hardwired to Circuit breaker 1 of the Power panel UD60A5. The current hydrogen detectors in type 5 shelters are hardwired into the UPS. The new UPS does not have this outlet so the hydrogen detector will need to be wired into the breaker panel.

Table 3

Site	ICAO	IP address	netmask	gateway
ABERDEEN	kabr	172.25.1.237	255.255.255.0	172.25.1.131
ALBUQUERQUE	kabx	172.25.2.237	255.255.255.0	172.25.2.131
NORFOLK	kakq	172.25.3.237	255.255.255.0	172.25.3.131
AMARILLO	kama	172.25.4.237	255.255.255.0	172.25.4.131
MIAMI	kamx	172.25.5.237	255.255.255.0	172.25.5.131
NCL MICHIGAN	kapx	172.25.6.237	255.255.255.0	172.25.6.131
LA CROSSE	karx	172.25.7.237	255.255.255.0	172.25.7.131
SEATTLE	katx	172.25.8.237	255.255.255.0	172.25.8.131
BEALE AFB	kbbx	172.25.9.237	255.255.255.0	172.25.9.131
BINGHAMTON	kbgm	172.25.10.237	255.255.255.0	172.25.10.131
EUREKA (BUNKER HILL)	kbhx	172.25.11.237	255.255.255.0	172.25.11.131
BISMARCK	kbis	172.25.12.237	255.255.255.0	172.25.12.131
BILLINGS	kblx	172.25.13.237	255.255.255.0	172.25.13.131
BIRMINGHAM	kbmx	172.25.14.237	255.255.255.0	172.25.14.131
BOSTON	kbox	172.25.15.237	255.255.255.0	172.25.15.131
BROWNSVILLE	kbro	172.25.16.237	255.255.255.0	172.25.16.131
BUFFALO	kbuf	172.25.17.237	255.255.255.0	172.25.17.131
KEY WEST	kbyx	172.25.18.237	255.255.255.0	172.25.18.131
COLUMBIA	kcae	172.25.19.237	255.255.255.0	172.25.19.131
CARIBOU	kcbw	172.25.20.237	255.255.255.0	172.25.20.131
BOISE	kcbx	172.25.21.237	255.255.255.0	172.25.21.131
STATE COLLEGE	kccx	172.25.22.237	255.255.255.0	172.25.22.131
CLEVELAND	kcle	172.25.23.237	255.255.255.0	172.25.23.131
CHARLESTON SC	kclx	172.25.24.237	255.255.255.0	172.25.24.131
CORPUS CHRISTI	kcrp	172.25.25.237	255.255.255.0	172.25.25.131
BURLINGTON	kcxx	172.25.26.237	255.255.255.0	172.25.26.131
CHEYENNE	kcys	172.25.27.237	255.255.255.0	172.25.27.131
SACRAMENTO	kdax	172.25.28.237	255.255.255.0	172.25.28.131
DODGE CITY	kddc	172.25.29.237	255.255.255.0	172.25.29.131
LAUGHLIN AFB	kdfx	172.25.30.237	255.255.255.0	172.25.30.131
PHILADELPHIA	kdix	172.25.31.237	255.255.255.0	172.25.31.131
DULUTH	kdlh	172.25.32.237	255.255.255.0	172.25.32.131
DES MOINES	kdmx	172.25.33.237	255.255.255.0	172.25.33.131
DOVER AFB	kdox	172.25.34.237	255.255.255.0	172.25.34.131
DETROIT	kdtx	172.25.35.237	255.255.255.0	172.25.35.131
QUAD CITIES	kdvn	172.25.36.237	255.255.255.0	172.25.36.131
DYESS AFB	kdyx	172.25.37.237	255.255.255.0	172.25.37.131
PLEASANT HILL	keax	172.25.38.237	255.255.255.0	172.25.38.131

TUCSON	kemx	172.25.39.237	255.255.255.0	172.25.39.131
ALBANY	kenx	172.25.40.237	255.255.255.0	172.25.40.131
FT NOVOSEL/ FT RUCKER	keox	172.25.41.237	255.255.255.0	172.25.41.131
EL PASO	kepz	172.25.42.237	255.255.255.0	172.25.42.131
LAS VEGAS	kesx	172.25.43.237	255.255.255.0	172.25.43.131
EGLIN AFB	kevx	172.25.44.237	255.255.255.0	172.25.44.131
AUSTIN/SAN ANTONIO	kewx	172.25.45.237	255.255.255.0	172.25.45.131
EDWARDS AFB	keyx	172.25.46.237	255.255.255.0	172.25.46.131
ROANOKE	kfcx	172.25.47.237	255.255.255.0	172.25.47.131
ALTUS AFB	kfdr	172.25.48.237	255.255.255.0	172.25.48.131
CANNON AFB	kfdx	172.25.49.237	255.255.255.0	172.25.49.131
ATLANTA	kffc	172.25.50.237	255.255.255.0	172.25.50.131
SIOUX FALLS	kfsd	172.25.51.237	255.255.255.0	172.25.51.131
FLAGSTAFF	kfsx	172.25.52.237	255.255.255.0	172.25.52.231
DENVER	kftg	172.25.53.237	255.255.255.0	172.25.53.131
DALLAS/FT WORTH	kfws	172.25.54.237	255.255.255.0	172.25.54.131
GLASGOW	kggw	172.25.55.237	255.255.255.0	172.25.55.131
GRAND JUNCTION	kgjx	172.25.56.237	255.255.255.0	172.25.56.231
GOODLAND	kgld	172.25.57.237	255.255.255.0	172.25.57.131
GREEN BAY	kgrb	172.25.58.237	255.255.255.0	172.25.58.131
FT CAVAZOS/FT HOOD	kgrk	172.25.59.237	255.255.255.0	172.25.59.131
GRAND RAPIDS	kgrr	172.25.60.237	255.255.255.0	172.25.60.131
GREER	kgsp	172.25.61.237	255.255.255.0	172.25.61.131
ANDERSEN AFB	pgua	172.25.62.237	255.255.255.0	172.25.62.131
COLUMBUS AFB	kgwx	172.25.63.237	255.255.255.0	172.25.63.131
PORTLAND ME	kgyx	172.25.64.237	255.255.255.0	172.25.64.131
HOLLOMAN AFB	khdx	172.25.65.237	255.255.255.0	172.25.65.131
HOUSTON	khgx	172.25.66.237	255.255.255.0	172.25.66.131
SAN JOAQUIN VALY	khnx	172.25.67.237	255.255.255.0	172.25.67.131
FT CAMPBELL	khpx	172.25.68.237	255.255.255.0	172.25.68.131
NORTHEAST ALABAMA	khtx	172.25.69.237	255.255.255.0	172.25.69.131
WICHITA	kict	172.25.70.237	255.255.255.0	172.25.70.131
CEDAR CITY	kicx	172.25.71.237	255.255.255.0	172.25.71.231
CINCINNATI	kiln	172.25.72.237	255.255.255.0	172.25.72.131
LINCOLN	kilx	172.25.73.237	255.255.255.0	172.25.73.131
INDIANAPOLIS	kind	172.25.74.237	255.255.255.0	172.25.74.131
TULSA	kinx	172.25.75.237	255.255.255.0	172.25.75.131

PHOENIX	kiwa	172.25.76.237	255.255.255.0	172.25.76.131
NORTHERN INDIANA	kiwx	172.25.77.237	255.255.255.0	172.25.77.131
BRANDON MS	kdgx	172.25.78.237	255.255.255.0	172.25.78.131
JACKSONVILLE	kjax	172.25.79.237	255.255.255.0	172.25.79.131
ROBINS AFB	kjgx	172.25.80.237	255.255.255.0	172.25.80.131
JACKSON KY	kjkl	172.25.81.237	255.255.255.0	172.25.81.131
LUBBOCK	klbb	172.25.82.237	255.255.255.0	172.25.82.131
LAKE CHARLES	klch	172.25.83.237	255.255.255.0	172.25.83.131
HAMMOND	khdc	172.25.84.237	255.255.255.0	172.25.84.131
NORTH PLATTE	klnx	172.25.85.237	255.255.255.0	172.25.85.131
CHICAGO	klot	172.25.86.237	255.255.255.0	172.25.86.131
ELKO	klrx	172.25.87.237	255.255.255.0	172.25.87.231
ST LOUIS	klsx	172.25.88.237	255.255.255.0	172.25.88.131
WILMINGTON	kltx	172.25.89.237	255.255.255.0	172.25.89.131
LOUISVILLE	klvx	172.25.90.237	255.255.255.0	172.25.90.131
STERLING	klwx	172.25.91.237	255.255.255.0	172.25.91.131
LITTLE ROCK	klzk	172.25.92.237	255.255.255.0	172.25.92.131
MIDLAND/ODESSA	kmaf	172.25.93.237	255.255.255.0	172.25.93.131
MEDFORD	kmax	172.25.94.237	255.255.255.0	172.25.94.231
MINOT AFB	kmbx	172.25.95.237	255.255.255.0	172.25.95.131
MOREHEAD CITY	kmhx	172.25.96.237	255.255.255.0	172.25.96.131
MILWAUKEE	kmkx	172.25.97.237	255.255.255.0	172.25.97.131
MELBOURNE	kmlb	172.25.98.237	255.255.255.0	172.25.98.131
MOBILE	kmob	172.25.99.237	255.255.255.0	172.25.99.131
MINNEAPOLIS	kmpx	172.25.100.237	255.255.255.0	172.25.100.131
MARQUETTE	kmqt	172.25.101.237	255.255.255.0	172.25.101.131
KNOXVILLE	kmrx	172.25.102.237	255.255.255.0	172.25.102.131
MISSOULA	kmsx	172.25.103.237	255.255.255.0	172.25.103.231
SALT LAKE CITY	kmtx	172.25.104.237	255.255.255.0	172.25.104.231
SAN FRANCISCO	kmux	172.25.105.237	255.255.255.0	172.25.105.131
FARGO/GRAND FORKS	kmvx	172.25.106.237	255.255.255.0	172.25.106.131
MAXWELL AFB	kmxx	172.25.107.237	255.255.255.0	172.25.107.131
SAN DIEGO	knkx	172.25.108.237	255.255.255.0	172.25.108.131
MEMPHIS	knqa	172.25.109.237	255.255.255.0	172.25.109.131
OMAHA	koax	172.25.110.237	255.255.255.0	172.25.110.131
NASHVILLE	kohx	172.25.111.237	255.255.255.0	172.25.111.131
BROOKHAVEN	kokx	172.25.112.237	255.255.255.0	172.25.112.131
SPOKANE	kotx	172.25.113.237	255.255.255.0	172.25.113.131
PADUCAH	kpah	172.25.114.237	255.255.255.0	172.25.114.131
PITTSBURGH	kpbz	172.25.115.237	255.255.255.0	172.25.115.131

PENDLETON	kpdt	172.25.116.237	255.255.255.0	172.25.116.131
FT JOHNSON/ FT POLK	kpoe	172.25.117.237	255.255.255.0	172.25.117.131
PUEBLO	kpux	172.25.118.237	255.255.255.0	172.25.118.131
RALEIGH/DURHAM	krax	172.25.119.237	255.255.255.0	172.25.119.131
RENO	krgx	172.25.120.237	255.255.255.0	172.25.120.231
RIVERTON/LANDER	kriw	172.25.121.237	255.255.255.0	172.25.121.131
CHARLESTON WV	krlx	172.25.122.237	255.255.255.0	172.25.122.131
PORTLAND OR	krtx	172.25.124.237	255.255.255.0	172.25.124.131
POCATELLO	ksfx	172.25.125.237	255.255.255.0	172.25.125.131
SPRINGFIELD	ksgf	172.25.126.237	255.255.255.0	172.25.126.131
SHREVEPORT	kshv	172.25.127.237	255.255.255.0	172.25.127.131
SAN ANGELO	ksjt	172.25.128.237	255.255.255.0	172.25.128.131
SANTA ANA MTS	ksox	172.25.129.237	255.255.255.0	172.25.129.131
WESTERN ARKANSAS	ksrx	172.25.130.237	255.255.255.0	172.25.130.131
TAMPA	ktbw	172.25.131.237	255.255.255.0	172.25.131.131
GREAT FALLS	ktfx	172.25.132.237	255.255.255.0	172.25.132.131
TALLAHASSEE	ktlh	172.25.133.237	255.255.255.0	172.25.133.131
NORMAN	ktlx	172.25.134.237	255.255.255.0	172.25.134.131
TOPEKA	ktwx	172.25.135.237	255.255.255.0	172.25.135.131
FT DRUM	ktyx	172.25.136.237	255.255.255.0	172.25.136.131
RAPID CITY	kudx	172.25.137.237	255.255.255.0	172.25.137.131
GRAND ISLAND	kuex	172.25.138.237	255.255.255.0	172.25.138.131
MOODY AFB	kvax	172.25.139.237	255.255.255.0	172.25.139.131
VANDENBERG SFB	kvbx	172.25.140.237	255.255.255.0	172.25.140.131
VANCE AFB	kvnx	172.25.141.237	255.255.255.0	172.25.141.131
LOS ANGELES	kvtx	172.25.142.237	255.255.255.0	172.25.142.131
YUMA	kyux	172.25.143.237	255.255.255.0	172.25.143.231

TPS EFFECTIVITY