

STEP	PROCEDURE
5 (CONT)	Fluid flows from the reservoir pressurized with dry nitrogen at 12 PSI, and regulated from a K bottle, to provide a positive fluid flow to the main pump inlet.
6	Standby K bottle. 50 PSI MIN The K bottle provided with this unit supplies regulated dry nitrogen at a constant pressure (50 PSI) to be further regulated to approximately 12 PSI for reservoir pressurization within the unit.
7	Hydraulic reservoir Within Limits The unit hydraulic reservoir is provided with a sight gage housed inside of the lower, right hand access door. This sight gage has an upper and lower marking. The in-limit fluid level is determined by visually observing fluid between these markings.
8	Lamp test Performed Each lamp located on the face of the A/E27H-2 unit must be individually pressed to test (16 lamps). Burned out lamps must be replaced as soon as possible after discovery.
9	Visual check for excessive leakage. Performed A visual check for leakage must be performed on the unit by sliding all drip pans out for evidence of fluid. If an excessive leak other than static is discovered, further isolate the cause by opening access doors as required until the source of the leak is found and can be identified for documentation.
10	Air handler (AC2012) Damper linkage connected and unit operating Verified Temperature indicator(s). Normal SAC CEM 21-SM68-2-20-() Air handler (AC2012) supplies heating, cooling, and humidification to the missile silo under normal and launch conditions. If lox spillage occurs, it will automatically purge air from the missile silo.

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases) (Sheet 2 of 9)

STEP	PROCEDURE
11	Exhaust fan 2021. Operating Centrifugal air fan 2021 furnishes relief air from all levels of the equipment terminal to the missile silo air handler (AC2012).
12	Air Compressor (CC 5001) Supply tank pressure. Normal Control pressure. Normal Oil level Checked Drain tank. Accomplished Air compressor (CC 5001) is located on level II of the equipment terminal and furnishes supply pressure to all air conditioning pneumatic, temperature, humidity, and pressure controllers in the launcher areas. PROPELLANT SYSTEM
*13	Checkout power (assembly 8A2) Applied T.O. 21M-HGM25A-2-10-() MMT presses CHECKOUT POWER pushbutton indicator on control monitor group OA-2438/GJQ-11. The indicator will light red, then white in approximately 10 seconds. This supplies checkout power to the PLPS AGE.
14	Lamps Checked T.O. 21M-HGM25A-2-12-() Set LAMP VERIFY switch to 1 for red and white check and to 2 for green check. Lamps will be replaced if necessary. Return LAMP VERIFY switch to OFF.
15	INDICATING POWER. White INDICATING POWER lights the valve position pushbutton indicators of the propellant system AGE. When pressed the indicator lights white and remains white until pressed again. It lights green only during lamp verification.
16	PLPS in preset condition. Verified Preset condition for the PLPS is determined by the following indications on control monitor group OA-2440:

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases) (Sheet 3 of 9)

STEP	PROCEDURE
16 (CONT)	<ul style="list-style-type: none"> a. CHECKOUT switch to OFF. b. MODE switch LAUNCH. c. FCV-218 lower green. d. RESET indicator green. e. Four level sensors green. f. (Prior to incorporation of TCTO 31X3-10-11-627) All valve sensor and pushbutton indicators on assemblies 5A1, 5A2, 5A3, 6A1, and 6A3 upper green, except MISSILE PNEU I, MISSILE PNEU II, and FCV-507 lower green; STAGE I MISSILE FUEL VENT and STAGE II MISSILE FUEL VENT upper red; Stage I and II MISSILE FUEL PRESS REG lower green; Stage I and II MISSILE FILL AND DRAIN upper red; and Stage I and II MISSILE VENT NORMS (3) upper red. g. (After incorporation of TCTO 31X3-10-11-627) All valve sensor and pushbutton indicators on assemblies 5A1, 5A2, 5A3, 6A1, and 6A3 upper green, except FCV-507 lower green; STAGE I MISSILE FUEL VENT and STAGE II MISSILE FUEL VENT upper red; Stage I and II MISSILE FUEL PRESS REG lower green; Stage I and II MISSILE FILL AND DRAIN upper red; and Stage I and II MISSILE VENT NORMS (3) upper red.
17	<p>(After incorporation of TCTO 31X3-10-11-625) KEY switch (assembly 6A5) Positioned T.O. 21M-HGM25A-2-28-1</p> <p>Position KEY switch to ON for CSE and OFF for all other modes of operation.</p>
18	<p>(After incorporation of TCTO 31X3-10-11-634) FUEL EXERCISE-OFF switch. Positioned</p> <p>Verify FUEL EXERCISE-OFF switch is in the FUEL EXERCISE position when conducting a fuel exercise. All other times the FUEL EXERCISE-OFF switch will be in the OFF position.</p>

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases) (Sheet 4 of 9)

STEP	PROCEDURE
19	<p>(After incorporation of TCTO 31X3-10-11-625) BATTERY switch (assembly 6A5) Positioned</p> <p>Verify BATTERY switch is in the ACTIVATE position during EWO alert monitoring, all other times as briefed.</p>
*20	<p>Checkout power (assembly 8A2) Removed T.O. 21M-HGM25A-2-10-()</p> <p>MMT insures checkout power is no longer required for other subsystem checks, coordinates checkout power removal with MLO, then presses CHECKOUT POWER push-button indicator for a green indication which returns the system to an alert status.</p> <p><u>MISSILE SILO</u></p> <p>PROPELLANT SYSTEM</p>
21	<p>Condition of missile and missile silo Checked T.O. not required</p> <p>MMT, utilizing missile silo elevator, proceeds from level 1 through level 8. A visual inspection of the missile and missile silo is performed checking for RP-1 and hydraulic leaks, expended missile release mechanism explosive bolts, expended Stage I thrust chamber igniters, and condition of the missile silo sump area. If any pyrotechnic(s) is found expended, MMT will record time date in appropriate forms. Upon completion of inspection, MMT will proceed to level 7 1/2 to perform next step.</p>
22	<p>PI-9321-502 and PI-9321-522 3000(±100) T.O. 21M-HGM25A-2-12-() PSI</p> <p>MMT verifies that PI-9321-502 for the NO. 2 bank and PI-9321-522 for the NO. 1 bank of nitrogen start bottles each indicate 3000(±100) PSI. This pressure is utilized to accelerate the Stage I turbopump turbine to pump fuel and lox to the thrust chamber, during initial firing sequence.</p>
23	<p>CV-9321-505 Positioned</p>

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases) (Sheet 5 of 9)

STEP	PROCEDURE
23 (CONT)	<p>MMT verifies that CV-9321-505 is positioned to bank NO. 1. If the NO. 1 bank indicates less than 2900 PSI, the MMT will position CV-9321-505 to bank NO. 2. For the initiation of an exercise, the MMT will be required to position CV-9321-505 to the OFF position.</p>
24	<p>QD-9322-526 Stored</p> <p>MMT verifies that QD-9322-526 is disconnected and stored free of launcher path. When connected, QD-9322-526 provides the capability for servicing the nitrogen start system to the required pressure.</p>
25	<p>Exhaust fan 2001. Operating SAC CEM 21-SM68-2-20-()</p> <p>Exhaust fan 2001 removes air from the missile silo through the return and exhaust ducts.</p> <p><u>PROPELLANT TERMINAL</u></p> <p>PROPELLANT SYSTEM</p>
26	<p>Lox storage tank vacuum 150 Microns T.O. 21M-HGM25A-2-12-() MAX</p> <p>The annular space enclosed by the two walls of the lox storage tank is evacuated for thermal insulation by vacuum pump P-701.</p>
27	<p>PI-701. 250(±10) PSI</p> <p>PI-701 indicates the working pressure from the instrument air supply system. The pressure indicated on PI-701 operates flow control valves FCV-218, FCV-211, FCV-306, and FCV-207.</p>
28	<p>(LAFB 724TH/725TH SQDN) PI-702. 40(±1) PSI</p>
29	<p>(EAFB, BAFB, LAFB, MHAFB) PI-702. 35(±2) PSI</p> <p>PI-702 indicates the regulated working pressure from the instrument air supply system. The pressure indicated on PI-702 is used to operate flow control valves and to supply a working pressure for liquid level indicators.</p>

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases) (Sheet 6 of 9)

STEP	PROCEDURE
30	<p>PI-703. 35(±2) PSI</p> <p>PI-703 indicates the regulated working pressure from the instrument air supply system. The pressure indicated on PI-703 is used to operate pressure controllers which subsequently operate diaphragm type valves in the PLPS.</p>
31	<p>PI-601 and PI-602 5500 PSI MIN</p> <p>PI-601 indicates the stored helium pressure in T-601A, and PI-602 indicates the stored helium pressure in T-601B. This helium pressure is utilized for missile-borne tank pressurization and is transferred to the missile at initiation of the load propellant phase.</p>
32	<p>PI-402. 740 GAL MIN</p> <p>PI-402 indicates the amount, in gallons, of liquid nitrogen present in T-402.</p>
33	<p>PI-503. 1700 PSI MIN</p> <p>PI-503 indicates storage pressure of nitrogen contained in T-503. Gaseous nitrogen stored in T-503 is utilized primarily for utility services.</p>
34	<p>PI-516. 1900 PSI MIN</p> <p>PI-516 indicates pressure contained in T-504. This N₂ provides pneumatic pressure to operate airborne components as well as propellant tank pressurization during unloading.</p>
35	<p>PI-502. 600 PSI MIN</p> <p>PI-502 indicates the pressure available in T-502. This N₂ is utilized to provide a nitrogen blanket for the missile fuel and lox tanks. In addition, this nitrogen is used for the purging of the fuel tanks.</p>
36	<p>PI-303. 1650 PSI MIN</p> <p>PI-303 indicates the pressure available in T-301A, T-301B, and T-301C which are manifold together. This N₂ is utilized during lox transfer for pressurization of the lox storage tank.</p>

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases)(Sheet 7 of 9)

STEP	PROCEDURE
37	PI-202. 22,900 GAL MIN PI-202 indicates the amount, in gallons, of liquid oxygen in T-201.
38	PI-401. 925 GAL MIN PI-401 indicates the amount, in gallons, of liquid nitrogen in T-401.
39	PI-515. 1100 PSI MIN PI-515 indicates the pressure in T-505. This N ₂ is utilized to provide a blanket pressure for the lox transfer lines at all times during standby. In addition, this pressure is used to purge missile lox tanks.
40	P-303 HAND-OFF-AUTO switch. AUTO P-303 HAND-OFF-AUTO switch is set to AUTO position to provide automatic operation of the exhaust blower in the propellant terminal vent shaft.
41	Helium cooler 150 Microns MAX The annular space enclosed by the two walls of the helium cooler is evacuated for thermal insulation by vacuum pump P-703.
42	Lox subcooler vacuum. 150 Microns MAX The annular space enclosed by the two walls of the lox subcooler is evacuated for thermal insulation by vacuum pump P-703.
43	MCC 1001 circuit breaker. ON SAC CEM 21-SM68-2-21-() MCC 1001 supplies power for lox vacuum pumps P-701, P-702, and P-703, FN 2011, SP 3010, P-303, PNL 1010, LO ₂ air conditioning control transformer, and propellant terminal power receptacles.
44	Exhaust fan 2010. Operating SAC CEM 21-SM68-2-20-()

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases) (Sheet 8 of 9)

STEP	PROCEDURE
45	PI-707. 20(±1) PSI T.O. 21M-HGM25A-2-12-() PI-707 indicates the regulated pressure from the instrument air system which has been reduced to 20(±1) PSI by PRV-707. This pressure is routed to pressure transducers that control the Stage I and II lox topping valves.
46	PNL 1010 circuit breakers ON SAC CEM 21-SM68-2-21-() PNL 1010 supplies power for operation of control valves for the propellant loading system, PLPS vacuum gages, and gox analyzers.

Figure 3-12. Missile Maintenance Technician Alert Status Monitoring Procedure (Operational Bases) (Sheet 9 of 9)

STEP	PROCEDURE
1 thru 6	<p>All tasks preceded by an asterisk will be coordinated with the MLO.</p> <p>Deleted.</p> <p><u>EQUIPMENT TERMINAL</u></p> <p>LAUNCHER SYSTEM</p>
*7	<p>OVERRIDE/EXERCISE (CTL/exercise). EXERCISE</p>

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 1 of 9)

STEP	PROCEDURE
*8	OVERRIDE/EXERCISE (EWO)..... OVERRIDE
9	<p>OPERATION SELECTOR..... REMOTE</p> <p>The OPERATION SELECTOR switch determines if the power pack is to be operated remotely by the logic circuitry or locally from the cycling control station. The LOCAL position is used for maintenance only.</p>
10	<p>Lamp test..... Performed</p> <p>A lamp test is performed by pressing the LAMP TEST pushbutton on the annunciator panel.</p>
11	<p>Air handler (A/C 2402)..... Operating SAC CEM 21-SM68-2-20-()</p> <p>This handler operates only when room temperature rises above 65°F and will operate until temperature drops to 55° F. The operation of the hydraulic power pack increases the heat load.</p> <p>HYDRAULIC SYSTEM (C-216)</p>
12	<p>Pump suction pressure..... 12(+1) PSI T.O. 21-SM68-2FJ-9-()</p> <p>Fluid flows from the reservoir pressurized with dry nitrogen at 12 PSI, and regulated from a K bottle, to provide a positive fluid flow to the main pump inlet.</p>
13	<p>Standby K bottle..... 50 PSI (MIN)</p> <p>The K bottle provided with this unit is merely to supply regulated dry nitrogen at a constant pressure (50 PSI) to be further regulated to approximately 12 PSI for reservoir pressurization within the unit.</p>
14	<p>Hydraulic Reservoir..... Within Limits</p> <p>The unit hydraulic reservoir is provided with a sight gage housed on the lower right hand access door of the unit. This sight gage has an upper and lower black marking and the in-limits fluid level is determined by visually observing fluid within the two black lines.</p>

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 2 of 9)

STEP	PROCEDURE
15	<p>Lamp test..... Performed</p> <p>Each lamp located on the face of the A/E27H-2 unit must be individually pressed to test (16 lamps). Burned out lamps must be replaced as soon as possible after discovery.</p>
16	<p>Visual check for excessive leakage..... Performed</p> <p>A visual check for leakage must be performed on the unit by sliding all drip pans out for evidence of fluid. If an excessive leak other than static is discovered, further isolate the cause by opening access doors as required until the source of the leak is found and can be identified for documentation.</p>
17	<p>Air handler A/C 2501</p> <p>Damper linkage connected and unit operating..... Verified</p> <p>TI 2506..... Green, 65° F MIN</p> <p>TI 2505..... Green, 75° F MAX</p> <p>SAC CEM 21-SM68-2-20().</p> <p>This air handler supplies heating, cooling and humidification to the missile silo under normal and launch conditions. If lox spillage occurs, it will automatically purge air from the missile silo. Ref: SAC CEM.</p>
18	<p>Exhaust fan 2402..... Operating</p> <p>Centrifugal air fan 2021 furnishes relief air from all levels of the equipment terminal to the missile silo air handler (A/C 2012).</p>
19	<p>Air compressor CC 2401:</p> <p>Supply tank pressure gage..... Green, 70-80 PSI</p> <p>Control pressure gage..... Green, 15(+2) PSI</p> <p>This air compressor is located on level 2 of the equipment terminal and furnishes supply pressure to all air conditioning pneumatic temperature, humidity, and pressure controllers in the launcher areas.</p>

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 3 of 9)

STEP	PROCEDURE
*20	<p>PROPELLANT SYSTEM (EQUIPMENT TERMINAL)</p> <p>Checkout power (assembly 8A2).....Applied T.O. 21-SM68-2J-10-()</p> <p>MMT presses CHECKOUT POWER pushbutton indicator on control monitor group OA-2438/GJQ-11. The indicator will light red, then white in approximately 10 seconds. This supplies checkout power to the PLPS AOE.</p>
21	<p>Lamps.....Checked T.O. 21-SM68-2J-12-()</p> <p>Set LAMP VERIFY switch to 1 for red and white check and to 2 for green check. Lamps will be replaced if necessary. Return LAMP VERIFY switch to OFF.</p>
22	<p>INDICATING POWER.....White</p> <p>INDICATING POWER lights the valve position pushbutton indicators of the propellant system AOE. When pressed, the indicator lights white and remains white until pressed again. It lights green only during lamp verification.</p>
23	<p>PLPS in preset condition.....Verified</p> <p>A Preset Condition for the PLPS is determined by the following indications on control monitor group OA-2440:</p> <ul style="list-style-type: none"> a. CHECKOUT switch OFF. b. MODE SELECTOR switch LAUNCH. c. FCV-218 lower green. d. RESET indicator green. e. Four level sensors green. f. All valve sensor and pushbutton indicators on assemblies 5A1, 5A2, 5A3, 6A1 and 6A3 indicate upper green except FCV-507 lower green, STAGE I MISSILE FUEL VENT and STAGE II MISSILE FUEL VENT upper red; STAGE I

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 4 of 9)

STEP	PROCEDURE
23 (CONT)	and II MISSILE FUEL PRESS REG lower green; Stage I and II MISSILE FILL AND DRAIN are upper red; and Stage I and II MISSILE VENT NORMS (3) upper red.
24	KEY switch (assembly 6A5) Positioned Position KEY switch to ON for CSE and OFF for all other modes of operation.
24.1	(After incorporation of TCTO 31X3-10-11-634) FUEL EXERCISE-OFF switch. Positioned Verify FUEL EXERCISE-OFF switch is in the FUEL EXERCISE position when conducting a fuel exercise. All other times the FUEL EXERCISE-OFF switch will be in OFF position.
25	BATTERY switch (assembly 6A5) Positioned Verify BATTERY switch is in the ACTIVATE position during EWO alert status monitoring, all other times as briefed.
*26	Checkout power (assembly 8A2) Removed MMT insures checkout power is no longer required for other subsystem checks, coordinates checkout power removal with MLO, then presses CHECKOUT POWER pushbutton indicator for a green indication which returns the system to an alert status.
27	PROPELLANT SYSTEM (MISSILE SILO) Condition of missile and missile silo Checked T.O. not required MMT, utilizing missile silo elevator, proceeds from level 1 through level 8. A visual inspec- tion of the missile and missile silo is performed checking for RP-1 and hydraulic leaks, expended missile release mechanism explosive bolts, ex- pended Stage I thrust chamber igniters, and con- dition of the missile silo sump area. If any pyrotechnic(s) is found expended, MMT will record time date in appropriate forms. Upon completion of inspection, MMT will proceed to level 7 1/2 to perform next step.

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring
 Procedure (VAFB) (Sheet 5 of 9)

STEP	PROCEDURE
28	<p>PI-502 and PI-522 3000(±100) PSI T.O. 21M-HGM25A-2-12-2</p> <p>MMT verifies that PI-502 for the NO. 2 bank and PI-522 for the NO. 1 bank of nitrogen start bottles each indicate 3000(±100) PSI. This pressure is utilized to accelerate the Stage I turbopump turbine to pump fuel and lox to the thrust chamber during initial firing sequence.</p>

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 5A of 9)

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STEP	PROCEDURE
29	<p>CV-505.....Positioned</p> <p>MMT verifies that CV-505 is positioned to bank NO. 1. If the NO. 1 bank indicates less than 2900 PSI, the MMT will position CV-505 to bank NO. 2.</p>
30	<p>QD-9322-526.....Stored</p> <p>The MMT verifies that QD9322-526 is disconnected and stored free of launcher path. When connected, QD-9322-526 provides the capability for servicing the nitrogen start system to the required pressure.</p> <p>PROPELLANT SYSTEM (PROPELLANT TERMINAL)</p>
31	<p>Lox storage tank vacuum.....150 Microns (MAX)</p> <p>The annular space enclosed by the two walls of the lox storage tank is evacuated for thermal insulation by vacuum pump P-701.</p>
32	<p>P-701 Operating.....Verified</p> <p>The lox storage tank vacuum pump is maintained in an operating condition at all times except for maintenance. The pump is capable of evacuating the annular space in T-201 to 30 Microns.</p>
33	<p>PI-701.....250(±10) PSI</p> <p>PI-701 indicates the working pressure from the instrument air supply system. The pressure indicated on PI-701 operates flow control valves FCV-218, FCV-211, FCV-306, and FCV-207.</p>
34	<p>PI-702.....35(±2.0) PSI</p> <p>PI-702 indicates the regulated working pressure from the instrument air supply system. The pressure indicated on PI-702 is used to operate flow control valves and to supply a working pressure for liquid level indicators.</p>

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 6 of 9)

STEP	PROCEDURE
35	<p>PI-703..... 35(+2.0) PSI</p> <p>PI-703 indicates the regulated working pressure from the instrument air supply system. The pressure indicated on PI-703 is used to operate pressure controllers which subsequently operate diaphragm type valves in the PLPS.</p>
36	<p>PI-601 and PI-602..... 5500 PSI (MIN)</p> <p>PI-601 represents the stored helium pressure in T-601A, and PI-602 represents the stored helium pressure in T-601B. This helium pressure is utilized for missileborne tank pressurization and is transferred to the missile at initiation of the load propellants phase.</p>
37	<p>PI-402..... 740 GAL (MIN)</p> <p>PI-402 indicates the amount, in gallons, of liquid nitrogen present in T-402.</p>
38	<p>PI-503..... 1700 PSI (MIN)</p> <p>PI-503 indicates storage pressure of nitrogen contained in T-503. Gaseous nitrogen stored in T-503 is utilized primarily for utility service.</p>
39	<p>PI-516..... 1900 PSI (MIN)</p> <p>PI-516 indicates pressure contained in T-504. This N₂ pressure provides pneumatic pressure to operate airborne components and also provides pressure to pressurize missile propellant tanks for unloading purposes.</p>
40	<p>PI-502..... 600 PSI (MIN)</p> <p>PI-502 indicates the pressure available within T-502. This N₂ is utilized to provide a nitrogen blanket of the missile fuel and lox tanks. In addition, this nitrogen will be used to purge the fuel tanks.</p>
41	<p>PI-303..... 1600 PSI (MIN)</p> <p>PI-303 indicates the pressure available within T-301A, T-301B and T-301C which are manifolded together. This N₂ is utilized during pressurization of the lox storage tank.</p>

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 7 of 9)

STEP	PROCEDURE
42	PI-202..... 22,900 GAL (MIN) PI-202 will provide an indication of the amount of liquid oxygen, present within T-201.
43	PI-401..... 925 GAL (MIN) PI-401 indicates the amount, in gallons, of liquid nitrogen present in T-401.
44	PI-515..... 1100 PSI (MIN) PI-515 indicates the pressure available within T-505. This N ₂ is utilized to provide a blanket pressure for the lox transfer lines at all times during standby. In addition, this pressure is used to purge missile lox tanks.
45	P-303 HAND-OFF-AUTO..... AUTO The HAND-OFF-AUTO switch for P-303 is set to the AUTO position to provide automatic operation of the exhaust blower in the propellant terminal vent shaft.
46	Helium cooler..... 150 Microns (MAX) The annular space enclosed by the two walls of the Helium cooler is evacuated for thermal insulation by vacuum pump P-703.
47	P-703 operating..... Verified The vacuum pumps at VAFB are maintained in an operating condition at all times except for maintenance. They are capable of evacuating the annular space to 30 microns.
48	Lox subcooler vacuum..... 150 Microns (MAX) The annular space enclosed by the two walls of the lox subcooler is evacuated for thermal insulation by vacuum pump P-703.
49	P-702 operating..... Verified The vacuum pumps are maintained in an operating condition at all times except for maintenance. They are capable of evacuating the annular space to 30 microns.

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 8 of 9)

STEP	PROCEDURE
50	MCC 1507 and MCC 1508 circuit breakers..... ON
51	Exhaust fan 2010..... Operating
52	PI-707..... 20(+1) PSI PI-707 indicates the regulated pressure from the instrument air system which has been reduced to 20 PSI by PRV-707. This pressure is routed to pressure transducers that control the Stage I and II lox topping valves.
53	PNL 1607..... ON

Figure 3-13. Missile Maintenance Technician Alert Status Monitoring Procedure (VAFB) (Sheet 9 of 9)

STEP	PROCEDURE
1	<p>Annunciator panel checkout: SAC CEM 21-SM68-2-21-()</p> <ol style="list-style-type: none"> a. Request control center stand by for annunciator panel test. b. Rotate annunciator panel TEST switch through all 12 positions and return to zero. c. Press annunciator ACKN pushbutton. d. Verify with LCFC operator that POWERHOUSE EMERGENCY indicator and alarm (LCFC) are operating. <p style="text-align: center;">Note</p> <p style="text-align: center;">Repeat steps b thru d on the remaining four annunciator TEST switches.</p> <ol style="list-style-type: none"> e. Press annunciator RESET pushbutton. f. Verify with LCFC operator that POWERHOUSE EMERGENCY indicator is not lighted.
2	<p>Operating switchgear inspection:</p> <p style="text-align: center;">Note</p> <p style="text-align: center;">Operating switchgear inspection will be performed on all operating power generation switchgear connected to the main bus.</p> <ol style="list-style-type: none"> a. Verify GENERATOR and GENERATOR FIELD circuit breakers are closed and indicators are lighted red. b. Insure DIESEL ENGINE START-RUN switches are set to RUN, and AMMETER selector switch is set to the highest indicating phase. c. Check voltages on all phase on the NO. 1 generator control panel. d. Check instruments on generator and exciter control panel for proper operation. e. Insure voltage REGULATOR CUTOFF switches are set to REG. f. Insure exciter manual field rheostats are turned fully counterclockwise.

Figure 3-13A. Electrical Power Production Technician Alert Status Monitoring Procedure (LAFB 724TH/725TH SQDN) (Sheet 1 of 7)

STEP	PROCEDURE
2 (CONT)	g. (Complex 4A only) Insure commercial power selector switch is set to MAN.
3	<p>Standby switchgear inspection:</p> <p style="text-align: center;">Note</p> <p>The standby switchgear inspection will be performed on all power generation switchgear not connected to the main bus and not in a maintenance status</p> <ul style="list-style-type: none"> a. Verify GENERATOR and GENERATOR FIELD circuit breakers are tripped, indicators lighted green, and targets green. b. Set DIESEL ENGINE START-RUN switch(s) to START. c. Set RESET TRIP relays to RESET. d. Insure AMMETER selector switches are set to NO. 1. e. Verify flags on safety devices, and generator and exciter control panels are clear. f. Insure voltage REGULATOR CUTOFF switches are set to REG. g. Insure exciter manual field rheostats are turned fully clockwise.
4	<p>Standby diesel engine(s) checkout:</p> <p style="text-align: center;">Note</p> <p>Standby diesel engine(s) checkout will be performed on all standby diesel engines. All diesel engines not in a maintenance status will be in a standby configuration.</p> <ul style="list-style-type: none"> a. Check exciter belts for tension and wear. b. Insure that all obstructions to the alternator and associated rotating equipment are removed. c. Verify switches 1320 through 1323 are closed. d. Insure the air manifold drain valve, indicator valves (8), aftercooler drain valve, and turbocharger drain valves are open. e. Insure the engine lub oil cooler drain valve is closed.

Figure 3-13A. Electrical Power Production Technician Alert Status Monitoring Procedure (LAFB 724TH/725TH SQDN) (Sheet 2 of 7)

STEP	PROCEDURE
4 (CONT)	<p>f. Insure the prelube oil suction valve and lube oil cooler chilled water supply and return valves are open.</p> <p>g. Insure the cyclonic separator equalizer valve, steam outlet valve, water return valve, and water makeup valves (3) are open.</p> <p>h. Insure the cyclonic separator makeup water bypass valve is closed.</p> <p>i. Insure the starting air supply valve is closed.</p> <p>j. Insure the fuel oil supply valves, turbocharger oil cooler treated water valves, and aftercooler treated water valves are open.</p> <p>k. Insure the lube oil sump tank fill and drain valves are closed.</p> <p>l. Check engine and turbocharger oil level.</p> <p>m. Set engine console power supply switch to ON.</p> <p>n. Rotate indicator light test switch on engine console to test that all indicators light.</p> <p>o. Press engine START pushbutton.</p> <p style="text-align: center;">CAUTION</p> <p>If engine lube oil pressure gage does not indicate 4 to 5 PSI, set engine console power supply switch to OFF and repeat steps m and o until 4 to 5 PSI is indicated.</p> <p>p. Set engine console power supply switch to OFF.</p> <p>q. Insure starting air supply valve is open.</p> <p>r. Set throttle control lever to STOP.</p> <p>s. Turn governor LOAD LIMIT knob to 0.</p> <p>t. Set SPEED DROOP to 30 or as required.</p> <p>u. Set SYNCHRONIZER indicator so engine will run at approximately 450 RPM.</p>

Figure 3-13A. Electrical Power Production Technician Alert Status Monitoring Procedure (LAFB 724TH/725TH SQDN) (Sheet 3 of 7)

STEP	PROCEDURE
4 (CONT)	<p style="text-align: center;">CAUTION</p> <p>Indicator valves must be observed for moisture and foreign material during engine blow out.</p> <p>v. Pull and immediately release starting air valve several times until the engine has completed two revolutions; then pull and hold starting air valve until engine completes six to eight revolutions, then release.</p> <p>w. Close indicator valves (8).</p> <p>x. Set governor LOAD LIMIT knob to 2.5 or as required.</p> <p>y. Set throttle control lever to RUN.</p> <p>z. Set engine console power supply switch to ON.</p> <p>aa. Press engine START pushbutton.</p> <p style="text-align: center;">Note</p> <p>If engine fails to start automatically, set engine console power supply switch to OFF and start manually.</p> <p>ab. Close starting air supply valve.</p> <p>ac. Perform post diesel engine(s) startup checkout (refer to step 5).</p> <p>ad. Set governor LOAD LIMIT knob to 10.</p> <p>ae. Press engine STOP pushbutton.</p> <p style="text-align: center;">Note</p> <p>After engine stops rotating perform step af.</p> <p>af. Set engine console power supply switch to OFF.</p> <p>ag. Open starting air supply valve.</p> <p>ah. Record time and date standby diesel engine(s) checkout completed.</p> <p style="text-align: center;">Note</p> <p>The standby diesel engine(s) checkout must be performed every eight hours.</p>

Figure 3-13A. Electrical Power Production Technician Alert Status Monitoring Procedure (LAFB 724TH/725TH SQDN) (Sheet 4 of 7)

STEP	PROCEDURE
5	Post diesel engine(s) startup checkout: <ol style="list-style-type: none"> a. Check exciter and generator for vibration and arcing. b. Verify governor oil level is normal. c. Verify engine lube oil sump level is normal. d. Verify turbocharger lube oil sump level is normal. e. Check engine console for proper pressure and temperature indications.
6	Fuel and lube oil transfer system inspection: <ol style="list-style-type: none"> a. Check fuel and lube oil system for proper valve and control switch position. b. Check fuel oil control panel for proper indications. c. Check lube oil storage tank level indicators for proper indications. <p style="text-align: center;">Note</p> <p style="text-align: center;">Step 6d will be performed in conjunction with steps 8 and 9.</p> <ol style="list-style-type: none"> d. Check fuel and lube oil system for proper valve position.
7	Cyclonic separator checkout: <ol style="list-style-type: none"> a. Check condensate receiver tank water for normal level. b. Set condensate pump LEAD-LAG switch to opposite position. c. Check condensate tank for normal pressure. d. Check separator water level and steam pressure for normal indications. e. Perform blowdown of separators.
8	AC-2 diesel engine inspection and checkout: <ol style="list-style-type: none"> a. Verify diesel fuel and lube oil level is normal. b. Set disconnect switch, located at lower left of engine panel, to ON (if applicable).

Figure 3-13A. Electrical Power Production Technician Alert Status Monitoring Procedure (LAFB 724TH/725TH SQDN) (Sheet 5 of 7)

Changed 19 March 1964 TOCN 1-1 (DEN-12)

STEP	PROCEDURE
8 (CONT)	<p>c. Set toggle switch, located at lower right of engine panel, to ON.</p> <p>d. Press and hold GLOW PLUGS pushbutton.</p> <p>e. Hold toggle switch on lower left of engine panel to START until engine starts; then release GLOW PLUGS pushbutton and START switch.</p> <p style="text-align: center;">Note</p> <p style="text-align: center;">Allow engine to operate for 15 minutes before performing step f.</p> <p>f. Set toggle switch, located on lower right of engine panel, to OFF.</p> <p>g. Set disconnect switch, located at lower left of engine panel, to OFF (if applicable).</p>
9	<p>Starting air system inspection:</p> <p>a. Set starting air compressor HAND-OFF-AUTO switch to OFF.</p> <p>b. Check starting air compressor for normal oil level and proper belt tension.</p> <p>c. Drain condensate from receiver tanks.</p> <p>d. Verify all valves for proper position.</p> <p>e. Set starting air compressor HAND-OFF-AUTO switch to AUTO.</p>
10	<p>Standby diesel engine(s) pre-lube and blow out checkout:</p> <p>a. Set throttle control lever to STOP.</p> <p>b. Turn governor LOAD LIMIT knob to 0.</p> <p>c. Open indicator valves (8).</p> <p>d. Close starting air supply valve.</p> <p>e. Set engine console power supply switch to ON.</p> <p>f. Press engine START pushbutton.</p>

Figure 3-13A. Electrical Power Production Technician Alert Status Monitoring Procedure (LAFB 724TH/725TH SQDN) (Sheet 6 of 7)

STEP	PROCEDURE
10 (CONT)	<p style="text-align: center;">CAUTION</p> <p>If engine oil pressure gage does not indicate 4 to 5 PSI, set engine console power supply switch to OFF and repeat steps e and f until 4 to 5 PSI is indicated.</p> <p>g. Set engine console power supply switch to OFF.</p> <p>h. Open starting air supply valve.</p> <p style="text-align: center;">CAUTION</p> <p>Indicator valves must be observed for moisture and foreign material during engine blow out.</p> <p>i. Pull and immediately release starting air valve several times until engine has completed two revolutions; then pull and hold starting air valve until engine completes six to eight revolutions, then release.</p> <p>j. Set throttle control lever to RUN.</p> <p>k. Turn governor LOAD LIMIT knob to 10.</p> <p>l. Close indicator valves (8).</p>

Figure 3-13A. Electrical Power Production Technician Alert Status Monitoring Procedure (LAFB 724TH/725TH SQDN) (Sheet 7 of 7)

STEP	PROCEDURE
1	<p>Annunciator panel checkout.....Accomplished SAC CEM 21-SM68-2-21-()</p> <p>The EPPT accomplishes the annunciator panel checkout by pressing annunciator TEST pushbutton and verifying all indicators are lighted.</p>
2	<p>Standby switchgear inspection:</p> <p style="text-align: center;">Note</p> <p>The standby switchgear inspection will be performed on all power generation switchgear not connected to the main bus or not in a maintenance status.</p> <ol style="list-style-type: none"> a. Verify GENERATOR and GENERATOR FIELD circuit breakers are tripped, indicators lighted green, and targets green. b. Set generator START-RUN switch to START. c. Verify flags on safety devices, and generator and exciter control panels are clear. d. Set FUEL LOCKOUT switch and LOCKOUT circuit breaker switch to the vertical position. e. Set VOLTAGE REGULATOR selector switch to AUTO. f. Insure exciter manual field rheostats are turned fully clockwise.
3	<p>Standby diesel engine(s) checkout:</p> <p style="text-align: center;">Note</p> <p>Standby diesel engine(s) checkout will be performed on all standby diesel engines. All diesel engines not in a maintenance status will be in a standby configuration.</p> <ol style="list-style-type: none"> a. Insure engine starting air supply valve is open. b. Insure turbocharger aftercooler drain valves are open. c. Press pre-circulating lube oil pump START pushbutton and verify that oil flows through the turbocharger oil line sight glass and that pressure rises slowly on engine and turbocharger oil pressure gages.

Figure 3-14. Electrical Power Production Technician Alert Status Monitoring Procedure (EAFB, BAFB, LAFB, MHA FB) (Sheet 1 of 8)

STEP	PROCEDURE
3 (CONT)	<p>d. Press CRANKCASE VACUUM pump START pushbutton.</p> <p>e. Press engine JACKET WATER pump START pushbutton.</p> <p>f. Set engine governor LOAD LIMIT knob to MIN FUEL.</p> <p>g. Open indicator valves (8).</p> <p style="text-align: center;">Note</p> <p>Engage engine barring gear and rotate engine two revolutions; then secure barring gear.</p> <p style="text-align: center;">CAUTION</p> <p>Indicator valves must be observed for moisture and foreign material during engine blow out.</p> <p>h. Intermittently press AUXILIARY START pushbutton, located under engine governor, until engine has completed two revolutions.</p> <p>i. Close indicator valves (8).</p> <p>j. Set governor LOAD LIMIT knob to MAX FUEL.</p> <p>k. Adjust SPEED and SPEED DROOP as required.</p> <p style="text-align: center;">CAUTION</p> <p>Before starting engine, check for oil indication in turbocharger sight gage.</p> <p>l. Press pre-circulating lube oil pump START pushbutton and verify oil in turbocharger sight gage.</p> <p>m. Press engine START pushbutton.</p> <p>n. Check engine control console for normal pressure and temperature indications.</p> <p>o. Close turbocharger aftercooler drain valves.</p> <p>p. Check pillow block bearing oil rings for normal indications.</p>

Figure 3-14. Electrical Power Production Technician Alert Status Monitoring Procedure (EAFB, BAFB, LAFB, MHA FB) (Sheet 2 of 8)

STEP	PROCEDURE
4	<p>Post diesel engine(s) startup checkout:</p> <ul style="list-style-type: none"> a. Check exciter and generator for vibration and arcing. b. Verify governor oil level is normal. c. Verify engine lube oil sump level is normal. d. Check engine console for normal pressure and temperature indications. <p style="text-align: center;">Note</p> <p style="text-align: center;">Allow engine to operate for 30 minutes before continuing with procedure.</p> <ul style="list-style-type: none"> e. Adjust engine speed to 450 RPM. f. Press engine STOP pushbutton. g. Press pre-circulating lube oil pump START pushbutton when turbocharger lube oil pressure has decreased to 20 PSI. <p style="text-align: center;">Note</p> <p style="text-align: center;">Allow engine to stop rotating before continuing with procedure.</p> <ul style="list-style-type: none"> h. Press pre-circulating lube oil pump STOP pushbutton. i. Record time and date that the standby diesel engine(s) checkout is completed. <p style="text-align: center;">Note</p> <p style="text-align: center;">The standby diesel engine(s) checkout must be accomplished every eight hours.</p>
5	<p>Operating switchgear inspection:</p> <p style="text-align: center;">Note</p> <p style="text-align: center;">Operating switchgear inspection will be performed on all operating power generation switchgear connected to the main bus.</p> <ul style="list-style-type: none"> a. Verify GENERATOR and GENERATOR FIELD circuit breakers are closed.

Figure 3-14. Electrical Power Production Technician Alert Status Monitoring Procedure (EAFB, BAFB, LAFB, MHAFFB) (Sheet 3 of 8)

STEP	PROCEDURE
5 (CONT)	<ul style="list-style-type: none"> b. Verify GENERATOR and GENERATOR FIELD indicators are lighted red. c. Verify FEEDER circuit breakers 1 through 5 are closed. d. Verify FEEDER circuit breakers indicators 1 through 5 are lighted red. e. Verify START-RUN switch is set to RUN. f. Check all instruments on the generator and exciter panel for proper operation. g. Verify VOLTAGE REGULATOR switch is set to AUTO.
6	<p>Distribution panels and motor control centers inspection:</p> <ul style="list-style-type: none"> a. Verify all circuit breakers and switches on sub-station 1010 are ON. b. Verify GROUND lights on sub-station are lighted. c. Verify all circuit breakers and switches on DC power panels 1042 and 1043 are properly positioned. d. Verify all circuit breakers and switches on all motor control centers are properly positioned. e. Verify circuit breakers and switches on FEEDER panels 6 through 10 are properly positioned.
7	<p>Fuel and lube oil transfer system inspection:</p> <ul style="list-style-type: none"> a. Check fuel and lube oil system for proper valve and control switch positions. b. (BAFB, LAFB, MHAFFB) Check fuel oil control panel for proper indications. c. (BAFB, LAFB, MHAFFB) Check lube oil storage tank level indicators for proper indications.
8	<p>Hot water system inspection: SAC CEM 21-SM68-2-24-()</p> <ul style="list-style-type: none"> a. Verify hot water pump(s) operating properly. b. Verify water level and air pressure in hot water compression tank are normal.

Figure 3-14. Electrical Power Production Technician Alert Status Monitoring Procedure (EAFB, BAFB, LAFB, MHAFFB) (Sheet 4 of 8)

STEP	PROCEDURE
9	Cyclonic separator checkout: <ol style="list-style-type: none"> a. Check separator for normal water level and low pressure steam header for normal indications. b. Check control air for normal pressure. c. Verify supply valve is open. d. Verify bypass valve is closed. e. Perform blowdown; then close drain and/or blowdown valve.
10	Heat recovery silencer checkout: <ol style="list-style-type: none"> a. Verify water level is normal. b. Verify supply valve is open. c. Verify bypass valve is closed. d. Perform blowdown; then close drain and/or blowdown valve.
11	Chilled water system inspection: <ol style="list-style-type: none"> a. Verify one chilled water pump is operating properly and the other chilled water pump is in standby. b. Verify water level and air pressure in chilled water expansion tank is normal.
12	Battery rectifier inspection: SAC CEM 21-SM68-2-21-() <ol style="list-style-type: none"> a. Verify GROUND indicators are lighted. b. Check voltmeter for proper indication. c. Check ammeter for proper indication.
13	Utility air and starting air systems inspection: SAC CEM 21-SM68-2-26-() <ol style="list-style-type: none"> a. Set starting air compressor HAND-OFF-AUTO switch to OFF. b. Check for normal oil level and proper belt tension. c. Drain condensate from receiver tank.

Figure 3-14. Electrical Power Production Technician Alert Status Monitoring Procedure (EAFB, BAFB, LAFB, MHAFB) (Sheet 5 of 8)