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chilled water valve is noted. Compressor output and power requirements are measured. Air is bled from the PLS receiver and tested to verify that it is oil and water free.



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TEST SUMMARY

TEST TITLE: HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS

TEST NUMBER: M11

OBJECTIVE:

The purpose of this test is to verify the ability of the Heating, Ventilating and Air Conditioning Systems to distribute air at the proper volume, temperature and humidity.

ITEMS TO BE TESTED:

Fans and blowers

A/C Unit hot water circulating pumps

A/C Unit hot, chilled and spray water valves and valve controls

Air distribution and volume controls

Heating System unit heaters, heat exchanger, controls and glycol circulating pumps.

SUPPORT EQUIPMENT:

Air velocity meter; Anemotherm Model 60

Manometer; Ellison Draft Gauge Co.

Thermometer, dry bulb; 0° -220°F

Psychrometer, sling type; 30° -100°F

Tachometer; 0-3000 rpm

Hygrometer

Portable A.C. voltmeters, 0-150 and 0-600 volts

Ammeter A.C. clamp-on-type; 0-5, 0-15, 0-60 and 0-100 amperes

PREREQUISITES:

The facility A/C system has a common source of outside air, therefore, the systems test must be performed simultaneously on a trial and error basis to balance air flows. All system equipment must be operable at beginning of this test.



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The operation of the following facility systems must be demonstrated prior to the start of this test:

Powerhouse Diesel Generator

Powerhouse utility air compressor

Hot water heating system

Chilled water system

Water chiller

Portal silo and blast door interlock control

Motor control centers

Switchgear

Raw water supply and storage system

Water treatment system

Control air compressor

Domestic hot and chilled water excess flow valves

TEST DESCRIPTION:

All system strainers and filters are inspected and cleaned, if necessary.

Thermostats, humidstats and differential pressure controllers are set to maintain design conditions. Power is applied to pump, blower and fan motors. Fan speeds are adjusted for designed air outputs and proper power requirements of motors verified. System volume control dampers and diffusers are adjusted to provide the proper air flow rates. Thermostats are set above and then below existing room temperatures. Operation of temperature controllers to place the A/C units in cooling and heating cycles is noted. Hot water circulating pump operation is checked while units are in heating cycle. Temperatures of chilled and hot water to and from the cooling and heating coils is measured. Operation of the humidstats and associated controls to operate the spray valves is verified. Operation of the differential pressure controllers and positioning of automatic dampers to maintain positive static pressure within the structure is confirmed.



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TEST SUMMARY

TEST TITLE: MISSILE SILO SMOKE TEST

TEST NUMBER: M12

OBJECTIVE:

The purpose of this test is to verify proper distribution of air to the missile silo from the supply registers, and that smoke and odor are removed from the missile silo within 100 minutes after the smoke has been introduced.

ITEM TO BE TESTED:

Supply air registers

Return air registers

SUPPORT EQUIPMENT:

Smoke candles; 2 minute type

Smoke tube assembly

Key for adjusting air registers

Respirators

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Heating, ventilating and air conditioning system

Control air compressor

TEST DESCRIPTION:

Smoke candles are placed in the missile silo air conditioning supply duct. Supply and return air registers are adjusted to obtain the desired air distribution pattern. The proper distribution pattern will clear the silo of smoke and odor within 100 minutes.



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TEST SUMMARY

TEST TITLE: PROPELLANT TERMINAL SMOKE TEST

TEST NUMBER M13

OBJECTIVE:

The purpose of this test is to verify effective air distribution patterns from the air handling equipment of the missile silo.

ITEMS TO BE TESTED:

Supply air diffusers and registers. Unit heater fans.

SUPPORT EQUIPMENT:

Smoke candles, 2 minute type

Smoke tube assembly

Key for adjusting air registers

Respirators

PREREQUISITES:

The following facility system must be tested prior to the start of this test:

Heating, ventilating and air conditioning system

TEST DESCRIPTION:

Smoke is introduced into the propellant terminal from smoke candles placed in the A/C supply duct. Two tests are performed, one with the A/C unit and exhaust fan operating. During the second test the unit heaters are also in operation. The air distribution patterns are observed during each test. Diffusers and registers are adjusted, if necessary, to obtain the desired effectiveness of the distribution pattern.



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TEST SUMMARY

TEST TITLE: CONTROL AIR COMPRESSOR

TEST NUMBER: M14

OBJECTIVE:

The purpose of this test is to verify the operational capabilities of the Facility Control Air Compressors.

ITEMS TO BE TESTED:

Air compressor CC-1, Launcher area filtration facility

Air compressor CC-1, Equipment Terminal Level II

Air compressor CC-1, Control Center, Mechanical Equipment Room

Air compressor CC-1, Antenna Silo #1

SUPPORT EQUIPMENT

Ammeter "Clamp-on-type", 0-5 amperes

Standard tools for mechanics and electricians

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Powerhouse Diesel Generator

Switchgear

Motor Control Centers

TEST DESCRIPTION:

The compressor switches are placed in the ON position and functions of "cut-in" and "cut-out" pressure switches to start and stop the motors is verified. Amperage load of each motor is measured and compared to name plate rating. The receivers are over pressurized and the capability of the safety controls is verified. Pressure downstream of the pressure reducers is measured and proper control of the air pressure is confirmed.



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TEST SUMMARY

TEST TITLE: DOOR SEAL DE-ICING SYSTEM FOR ENTRY PORTAL

TEST NUMBER: M15

OBJECTIVE:

The purpose of this test is to verify the functional capabilities of the portal door seal de-icing system to prevent freezing of the door seals.

ITEMS TO BE TESTED:

Ethylene-glycol system

Heat exchanger

Circulating pump

Hose reel

Controls

Valves and vents

SUPPORT EQUIPMENT:

Portable thermocouple; view meter dial 0° -220°F

Hydrometer; range suitable for automobile antifreeze

Thermometer; 0° -220°F

PREREQUISITES:

This test should be performed at a time when the outside temperature is below freezing. The following facility systems must be tested prior to the start of this test:

Switchgear

Motor Control Centers

Powerhouse Diesel Generator

Hot Water Heating System

TEST DESCRIPTION:

The circulating pump starter switch is closed and proper pump operation



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and flow rate is verified. Hot water and ethylene glycol temperatures to and from the heat exchanger are measured and proper operating temperatures are confirmed. Specific gravity of the ethylene glycol solution is measured and, if necessary, corrected. Door seal temperatures are measured when outside temperatures are below 32°F. Seal temperatures are verified to be 35° to 40°F.



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TEST SUMMARY

TEST TITLE: DOOR SEAL DE-ICING SYSTEM FOR ANTENNA SILO

TEST NUMBER: M16

OBJECTIVE:

The purpose of this test is to verify the functional capabilities of Antenna Silo door seal de-icing system to prevent freezing of the door seals.

ITEMS TO BE TESTED:

Ethylene-glycol system

Heat exchanger

Circulating pump

Hose reel

Controls

Valves and vents

SUPPORT EQUIPMENT:

Portable thermocouple; view meter dial 0° -220°F.

Hydrometer; range suitable for automobile antifreeze

Thermometer; 0° -220°F

PREREQUISITES:

This test should be performed at a time when the outside temperature is below freezing.

The operation of the following facility systems must be demonstrated prior to the start of this test:

Motor Control Centers

Powerhouse Diesel Generator

Hot water heating system



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TEST DESCRIPTION:

The circulating pump starter switch is closed and proper pump operation and flow rate is verified. Hot water and glycol temperatures to and from the heat exchanges are measured and design operating temperatures confirmed. Specific gravity of the ethylene glycol solution is measured and, if necessary, corrected. Door seal temperatures are measured when outside temperatures are below 32°F. Seal temperatures are verified to be 35° to 40°F.



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TEST SUMMARY

TEST TITLE: WATER TREATMENT SYSTEM

TEST NUMBER M17

OBJECTIVE:

The purpose of this test is to verify that the water treatment system will perform as an integrated system to meet design requirements.

ITEMS TO BE TESTED:

Acid facilities storage tank, regenerant tank, pump and accessories

Caustic facilities flake equipment, dissolving system, pump and accessories.

Iron removal aeraters, filters, controls, piping and accessories.

Demineralizing system mixed bed units, acid mixer, caustic mixer, and heater and controls.

Backwash tank, pump, piping and controls.

Backflow preventer.

PH adjusting system

Hypochlorite system

SUPPORT EQUIPMENT:

Tachometer

Stopwatch

Kit for biological and chemical analysis of drinking water

Safety equipment for handling caustics and acids

PREREQUISITES:

The operation of the following facility systems must be demonstrated prior to the start of this test:

Switchgear

Motor control centers

Powerhouse utility air compressor

Raw water supply and storage system

Powerhouse diesel generator



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TEST DESCRIPTION:

All components of the acid and caustic system are pressurized and soap tested for leaks. The caustic agitator is tested for smooth running and proper dissolving of the caustic flakes. The caustic solution is tested and the proper percentage of NaOH is verified.

The pressure differential switch across the iron removal filter is closed and alarm responses are confirmed. The "Plant water hi-mineral" content alarm contacts are closed and the proper annunciator alarm panel and warning horn response is verified.

The pH adjusting system is actuated and set for a pH of 7.5 to 8.0.

The system pH valves shall not fall below 7.0. The raw water pumps are operated and designed flow rates confirmed. The backwash system is operated and the function of the automatic controls is verified.

The water system effluent is tested during as specified time and the flow rate measured. The proper mineral content, turbidity, pH valves and chlorine content are verified.



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TEST SUMMARY

TEST TITLE: JOCKEY PUMP AND FIRE PROTECTION PUMPS

TEST NUMBER: P1

OBJECTIVE:

The purpose of this test is to verify proper operation of the Fire Protection system pump and pump controls.

ITEMS TO BE TESTED:

Jockey pump P-803

Fire protection pumps P-802 and P-802A

Pressure switches PS-801 and PS-802

Pressure control valve and discharge header

SUPPORT EQUIPMENT:

Standard electrician's tools

Volts ohmmeter; portable AC/DC

Standard pipefitters's tools

Pressure gauge; 0-400 psig

Stop watch

Measuring tape; length 15 feet

Temperature indicator; 400 -150°F

PREREQUISITES:

The operation of the following facility systems must be demonstrated prior to the start of this test:

2.4 KV switchgear

Unit sub-stations

Motor control center

Motor protection set

Raw water supply and storage system

Powerhouse diesel generator



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TEST DESCRIPTION:

The fire water pumps are manually started; proper pump rotation, operating pressure, and flow rates are verified. The pump discharge valve is closed and proper temperatures use of pump liquid is confirmed. Automatic operation of the pumps from the pressure switch actuations is verified. The jockey pump is started from the local controls and the proper discharge pressure, flow rate, and operating temperature is confirmed.



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TEST SUMMARY

TEST TITLE: DOMESTIC, HOT & CHILLED WATER EXCESS FLOW CONTROL VALVES

TEST NUMBER: P2

OBJECTIVE:

The purpose of this test is to verify the ability of the excess flow valves in the hot, chilled and domestic water lines to close as a result of pipe line rupture between the blast lock and the missile silo.

ITEMS TO BE TESTED:

XFV-801-1, 6" Chilled water supply

XFV-801-2, 6" Chilled water supply

XFV-801-3, 6" Chilled water supply

XFV-803-1, 6" Chilled water return

XFV-803-2, 6" Chilled water return

XFV-803-3, 6" Chilled water return

XFV-803-1, 3" Domestic water supply

XFV-803-2, 3" Domestic water supply

XFV-803-3, 3" Domestic water supply

XFV-806-1, 3" Hot water supply

XFV-806-2, 3" Hot water supply

XFV-806-3, 3" Hot water supply

XFV-807-1, 3" Hot water return

XFV-807-2, 3" Hot water return

XFV-807-3, 3" Hot water return

SUPPORT EQUIPMENT:

Pressure gauge; 0-500 psig

Flowmeter, water, 4"

Stopwatch

Standard plumber's tools



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PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Chilled water system

Hot water heating system

Raw water system

Domestic water hydro-pneumatic system

TEST DESCRIPTION:

The rupture disk in each line near the excess flow valve is removed and a flow meter is installed in its place. The respective water system is placed in operating and the flow rate increased until the excess flow valve closes. Proper flow rate and closure time interval for each valve is verified.



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TEST SUMMARY

TEST TITLE: FIRE WATER EXCESS FLOW CONTROL VALVE

TEST NUMBER: P3

OBJECTIVE:

The purpose of this test is to verify automatic shutoff of the fire water excess flow valve as a result of pipe line rupture downstream and to verify the electrical circuit from the valve limit switches to the water system control panel.

ITEMS TO BE TESTED:

Main valve

Limit switch actuation

Reset button

Surge control

Pressure reducing control

SUPPORT EQUIPMENT:

Pressure gauge; 0-600 psig

Orifice flanges with flow meter, pipe and pipe fittings

Timer with stop and go controller

Standard electrician's tools

Volt-ohmmeter; portable, AC/DC

Standard plumber's tools

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Missile silo contaminated waste system

Jockey pump and fire protection pumps

Raw water supply and storage system

Powerhouse diesel generators

Motor control centers



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TEST DESCRIPTION:

Temporary piping incorporating a shutoff valve and a flow-meter is installed in the Missile Silo and connected to the fire water line. The fire pumps are placed in operation, and flow rate through the excess flow valves is increased until the valve automatically closes. Proper closure time, flow rate, and differential pressure across the valve is verified. The reset button on the pressure differential controller is pressed, and the time required to open the valve is measured. The valve limit switch operation and proper position indication of the valve on the water system control panel is verified.



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TEST SUMMARY

TEST TITLE: EQUIPMENT TERMINAL SEEPAGE WATER AND WASHDOWN SYSTEM

TEST NUMBER: P4

OBJECTIVE:

The purpose of this test is to verify the adequacy of the Equipment Terminal sump pump and pump controls to deliver waste water to the Control Center sewage lift station.

ITEMS TO BE TESTED:

Pump and hand-off-automatic switch

Float and float switch

SUPPORT EQUIPMENT:

Pressure gauge; 0-30 psig

Timer

Standard electrician's tools

Volt-ohmmeter, AC/DC, portable

Standard plumber's tools

Measuring stick; length 12 feet

Flexible hose; 3/4 inch

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Switchgear

Unit sub-station

Motor control centers

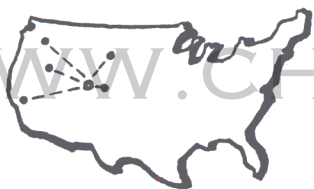
Raw water supply and storage system

Diesel generators

Domestic water-hydro-pneumatic

TEST DESCRIPTION:

The pressure gauge is installed on the discharge side of the pump. Float switches are manually operated and the proper "start-stop" water levels are verified. The HOA switch is placed in automatic position and the sump filled with a measured quantity of water. Proper pump operation, flow rate, and discharge pressure is confirmed.



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TEST SUMMARY

TEST TITLE: MISSILE SILO FOG SYSTEM

TEST NUMBER: P5

OBJECTIVE:

The purpose of this test is to verify the proper operation of the Missile Silo Fog System and all associated accessories in the control circuit and alarm circuit.

ITEMS TO BE TESTED:

Main valve FCU-805

Limit switch actuations

Selector switch actuations

Fog nozzles, type A and B

Solenoid Valves, single coil and double coils

SUPPORT EQUIPMENT:

Pressure gauges; 0-600 psig (2 req'd)

Timer with stop and go controller

Standard electrician's tools

One portable AC/DC ohmmeter - voltmeter

Standard plumbing tools

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Jockey pump and fire protection pumps

Raw water supply and storage systems

Diesel generators

Motor control centers

TEST DESCRIPTION:

One fog nozzle of types A and B will be bench tested for fogging action. It will be verified that the spray pattern is uniformly maintained and that the deluge covers areas and surfaces intended.



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TEST SUMMARY

TEST TITLE: MISSILE SILO SEEPAGE WATER SYSTEM

TEST NUMBER: P6

OBJECTIVE:

The purpose of this test is to verify system capability for the delivery of seepage water to the contaminated waste seal chamber located at Grade Level.

ITEMS TO BE TESTED:

Pump

Hand-off-automatic switch

Float and float system

SUPPORT EQUIPMENT:

Pressure gauge; 0-60 psig

Stop watch

Standard electrician's tools

One portable AC/DC volt ohmmeter

Standard plumber's tools

External measuring board with markings in feet and inches and internal float, arranged to indicate liquid levels in covered receiver.

Raw water supply.

Storage tanks

25 feet 3/4 inch dis. hose and couplings

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Motor control centers

Domestic water hydro-pneumatic system

TEST DESCRIPTION:

The "H-O-A" switch is placed in "Auto" position and the float switch is manually operated. Start and stop of the pump at the designated water levels is verified. A prescribed quantity of water is discharged through the pump and the time interval measured. Proper flow rate and discharge pressures are confirmed.



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TEST SUMMARY

TEST TITLE: PNEUMATIC SEWAGE EJECTOR SYSTEM IN EQUIPMENT TERMINAL

TEST NUMBER: P7

OBJECTIVE:

The purpose of this test is to verify the automatic function of the ejector system controls and the ability of the ejector system to deliver toilet wastes through the piping system to the sewage lift station in Control Center.

ITEMS TO BE TESTED:

3-way solenoid valve

Probe controls

SUPPORT EQUIPMENT:

Pressure gauge; range 0-100 psig

Timer with stop and go controller

Standard electrician's tools

Portable AC/DC ohmmeter - voltmeter

Standard plumber's tools

Measuring stick, 6 feet long, with feet and inches graduations

25 feet of 3/4 inch dia. hose with hose and connections

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Motor control center

Plant and PLS instrument air compressor

TEST DESCRIPTION:

The ejector pot is filled with water and the "on-off-auto" switch is placed in the "auto" position. The switch and solenoid valve action to discharge the ejector pot is verified. The amount of water ejected and the time interval required for ejection is measured to verify proper flow rate.



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TEST SUMMARY

TEST TITLE: DOMESTIC WATER HYDRO-PNEUMATIC SYSTEM

TEST NUMBER: P8

OBJECTIVE:

The purpose of this test is to verify the operational capabilities of the Domestic Water Hydro-Pneumatic System, and to confirm that the system will provide the proper pressures and flow rates to maintain design conditions.

ITEMS TO BE TESTED:

Accumulator tank controls

Raw water flow control valve

Booster pumps and controls

Utility air solenoid regulating valve

Hydro-pneumatic tank controls

Domestic water pressure regulating valve

SUPPORT EQUIPMENT:

Insertion type dial pressure gauge; 0-100 psig

Rubber hose with coupling; 2½ in.

Gate valve, flanged, 3 in.

3" X 3" X 2½" flanged tee with 2½" matching blind flange

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Motor protection test

Control air system

Raw water supply and storage system

Contaminated waste system

Water treatment system

TEST DESCRIPTION:

The accumulator tank water is varied and the low level alarm responses are demonstrated. The opening and closing of the flow control valve to maintain designated water levels in the tank is verified. The domestic water pump controls are manually operated and pump pressures measured. Automatic operation of the pumps due to tank pressures is verified. Relief valve operation is tested. The ability of pressure regulators to maintain system design pressures under varying loads is confirmed.

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TEST SUMMARY

TEST TITLE: MISSILE SILO CONTAMINATED WASTE SYSTEM

TEST NUMBER: P9

OBJECTIVE:

The purpose of this test is to verify the ability of the contaminated waste pumps and associated controls to remove waste water from the Missile Silo Sump.

ITEMS TO BE TESTED:

Pumps and motors

Float switches

Low temperature sensor and controller

SUPPORT EQUIPMENT:

Pressure gauge; 0-100 psig

Stop watch

Stand electrician's tools

Portable AC/DC volt-ohmmeter

Chilled water, ten gallon container

Thermometer, immersion type; 30° - 100°F

AC Ammeter, clamp on type; 300 amp

Folding rule; 10 feet long

PREREQUISITES:

The operational capability of the following facility systems must be demonstrated prior to the start of this test:

Diesel generators

Raw water supply and storage system

Motor control centers

TEST DESCRIPTION:

The float switches are manually operated to demonstrate that the pumps will start and stop at proper water levels and that the alternater transfers the



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TEST DESCRIPTION: (Continued)

pumping operation to the alternate pumps. The sensor of the low temperature cutout switch is immersed in ice water and shutoff of the pumps at low temperatures is confirmed. Pump discharge pressures and flow rates are measured and design capability verified.



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TEST SUMMARY

TEST TITLE: RP-1 FUEL SYSTEM

TEST NUMBER: P10

OBJECTIVE:

The purpose of this test is to verify the capability of the fuel system to receive fuel, load and unload the missile tanks, drain and blanket the fuel lines.

ITEMS TO BE TESTED:

Valve box connections

Fuel transfer unloading and line drain pumps

Stage I and Stage II fuel meters

Fuel transfer panel

Control valves and instrumentation

Liquid level indicator

SUPPORT EQUIPMENT:

Oil truck filled with 3,500 gallons of RP-1, unloading pump and 150 feet of 2½" hose

Oil truck, empty, with fuel unloading pump and 150 feet of 2½" hose

Timer with stop and go controller

Test pressure gauges; 30" high vac. - 150 psig

Standard pipefitter's tools

Standard electrician's tools

AC/DC volt-ohmmeter, portable

AC Ohmmeter, clamp-on type; 300 amps

Gaseous N₂ recharger truck

Cheese cloth

Pressure gauges; 0-10 psi, 4½" diameter

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Motor control centers Plant and PLS instrument air compressor

Motor protection tests Control air compressors



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TEST DESCRIPTION:

The RP-1 tank truck is electrically grounded to the valve box, and the truck hose is connected to the fill valve. The pressure regulator and the safety valve operation is verified and a metered amount of fuel is pumped into the fuel tank. Accuracy of the fuel tank liquid level indicator is confirmed. Temporary connection of empty truck hose is made to Stage I and Stage II fuel loading interfaces. Fuel meters and the Product Gravity Selector are set to control flow. Fuel transfer pumps are started and proper pump pressures and flow rates verified. Fuel is transferred until the timing meter shuts-off. Meter capability to control timing and quantity of fuel transferred is verified. Ability of system to maintain blanket pressures is demonstrated.



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TEST SUMMARY

TEST TITLE: PORTAL HYDRAULIC SYSTEM

TEST NUMBER: D1

OBJECTIVE:

The purpose of this test is to verify the functional ability of the Portal Hydraulic System to open the main portal doors in the required time.

ITEMS TO BE TESTED:

The following components of the Portal Hydraulic System will be tested:

Portal door cylinders

Flow control valves

Hydraulic pump

Accumulators

Main line relief valves

Pressure switches

SUPPORT EQUIPMENT:

Stop watch - 1/10 sec. accuracy

Pressure gauge - 0-4000 psig

Jig or template - door position measurement in degrees

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Motor control centers

Unit substation

TEST DESCRIPTION:

The Portal Hydraulic System checks out all pertinent components of the system including pressure relief valve settings, accumulator bank charge pressures and times, and pump operation. In addition, proper operation of door limit switches, emergency controls, and the door-elevator interlock system. Portal door opening and closing are verified as being within the proper limits.



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TEST SUMMARY

TEST TITLE: PORTAL - INSTRUMENT TUBE TEST

TEST NUMBER: D2

OBJECTIVE:

The purpose of this test is to verify that the instrument tubes will raise, latch, and expose the instruments properly.

ITEMS TO BE TESTED:

Hydraulic cylinder

Instrument tube accumulator

Latch assembly

Hardening cap release

SUPPORT EQUIPMENT:

Air pressure gauge (0-400 psig)

Drain hose with fittings

Two-gallon capacity cans with caps

Portable hoist or fork lift

Stop watch - 1/10 sec. accuracy

Resilient pad, 8' x 8' x 1"

Temporary communications must be established between the following areas:

Instrument tube silo

Control center alarm control panel

Surface

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Portal hydraulic system

Central battery system

TEST DESCRIPTION:

The accumulator is drained of all hydraulic fluid and precharged with gas at 1000 psi. The system is charged with hydraulic fluid to 2900 psi. The instrument cylinder is raised and the proper action of the latch and cap release is noted. Proper operation of the anemometer and anemometer meter is verified. The instrument cylinder is lowered, restored to a hard condition, and the hydraulic system recharged.



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TEST SUMMARY

TEST TITLE: ESCAPE HATCHES

TEST NUMBER: D3

OBJECTIVE:

The purpose of this test is to verify the functional capabilities of the Portal and Blast Lock Escape Hatches.

ITEMS TO BE TESTED:

Portal escape hatch and associated hydraulic equipment

Blast lock escape hatch and associated mechanical equipment

SUPPORT EQUIPMENT:

None

PREREQUISITES:

The following facility systems must be tested prior to the start of this test:

Portal hydraulic system

Electrical power or auxiliary power supply is required.

This test shall be performed before sand is placed above the Blast Lock Escape Hatch.

TEST DESCRIPTION:

This automatic opening and closing capability of the Portal Escape Hatch is tested from both control stations, one above ground and the other at the top of the spiral stairway. Proper limit switch actuation, hydraulic system operation, and lamp indication is verified. The capability of opening the Portal Escape Hatch manually is checked out using the auxiliary sand pump. Manual operation of the Blast Lock Escape Hatch is tested using the chain hoist.



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TEST SUMMARY

TEST TITLE: TV CAMERA ELEVATING AND LOWERING MECHANISM

TEST NUMBER: D4

OBJECTIVE:

The purpose of this test is to verify the operational capabilities of the electro-pneumatic and mechanical systems associated with the TV Camera Elevating and Lowering Mechanism.

ITEMS TO BE TESTED:

TV Camera Elevating and Lowering Mechanism Compressed Air System

SUPPORT EQUIPMENT:

Electronic timer

Pressure gauge (0-250 psi)

Push button type limit switch

PREREQUISITES:

The following facility system tests must be completed prior to the performance of this test:

Electrical system

Utility air system

TEST DESCRIPTION:

One TV Camera installation will be subjected to the full test as described in this section. If all test criteria are satisfactorily met, subsequent tests run on the other cameras of the complex will be of an abbreviated form. The TV Camera Elevating and Lowering Mechanism Test is divided into three sub-tests:

1. Free fall gravity lowering with controlled exhaust
2. Air pressure lowering with controlled exhaust
3. Emergency lowering

In the first two portions of this test, the optimum setting of the air cylinder flow control valve is determined by raising and lowering the TV