

CARD TITLE: A/C Units
CARD NUMBER: NMH0102026

OWNER: HVAC

EVALUATORS:
WILLETS JERRY
BURDEN WILLIAM
FREDLUND JAMES
MILOSH JOHN
DELONG DAVID

NAME: _____

SSN: _____

**PALO VERDE
NUCLEAR GENERATING STATION**

HVAC

A/C Units

JOB QUALIFICATION CARD

NMH0102026



**APPROVAL
SINGLE POINT OF CONTACT**

**APPROVAL
TRAINING SECTION LEADER**

Signature and Date

Signature and Date

Original Signature on File

Effective Date : Jan 07, 2005

NAME: _____

SSN: _____

JQC Revision Data

Jan 07, 2005 Paula Stapleton

Revised JQC 12/10/2003

Change prerequisite from General 1 to General 2. JQCCN 04-05

Part 1 - Prerequisite (s)

Number	Title	Completion Date
NMH26	EPA CERTIFICATION	_____
NMH01XX049	HVAC General 2	_____
HVAC-001-00	AIR CONDITIONING CERTIFICATION	_____

Part 2 - Required Course (s)

Number	Title	Completion Date
NMH10	A/C Units	_____

Parts 1 and 2 Completed : _____
 Section Leader Signature and Date

Part 3 - REQUIRED ON-THE-JOB TRAINING (OJT)

Satisfy Parts 1 and 2 prior to start of Part 3.

		Evaluator	Date
ACU26	Check the operation of the CO2 storage refrigeration unit	_____	_____
ACU32	Check the operation of the Generrex A/C unit	_____	_____
ACU30	Check the operation of the starting air dyer A/C unit	_____	_____
ACU28	Check the operation of the PMUX A/C unit	_____	_____
ACU33	Check the operation of the Gas Turbine A/C unit	_____	_____
ACU24	Check the operation of the PAMU A/C unit	_____	_____

NAME: _____

SSN: _____

Technical References

- 13-N997-902-2 PAMU Control Wiring
- EDC 96-00284 for 13-MN-598B capacities and enviromental temperatures
- EDC 98-00346, APS log# 13-VTD-C-126-0006 Compair Kellog design information
- EDC 98-00346, APS log# 13-VTD-U987-0001 Ultra Air Products instruction manual
- Maintenance Standard and Expectations handbook
- MI# HFP00001 Inspect/adjust compressor belts, oil & refrigerant
- MI# HHD00005 Clean and inspect aftercoolers and airdryer.
- STM DG Volume 27/ Rev 4
- System Description Manual, Fire Protection - Chemical System
- System Training Manual vol. 64 Fire Protection and Detection System (FP/QK)
- System Training Manual vol. 55 Radiation Monitoring System (SQ)
- VTD-C285-0006-2 CO2 Storage Unit
- VTD-G080-0612-1 PAMU GE A/C Unit
- VTD-G080-0613-1 PAMU GE A/C Unit
- VTD-G080-0614-1 PAMU GE A/C Unit
- VTD-Gk020-0669 PAMU Kaman Panel
- VTD-H260-0282 PAMU Temp Contrl
- VTD-H260-0283 PAMU Switching Relays
- VTD-H260-0284 PAMU T'stat
- VTM K020-00001
- VTM-C-628-00002 Compair Kellogg
- WO Task# 034293 Inspect, clean, lubricate, and verify proper operation of ACU#1 & ACU#2
- WO Task# 094225 Inspect/clean air conditioner (HSNA33)
- WO Task# 094241 Inspect/clean air conditioner (HSNA37)
- Palo Verde Safety Manual

Part 4 Training and Qualification Certification

I have completed the training and qualification requirements for this work assignment.
I am ready to accept the responsibility for performing the tasks in this work assignment independently.

Trainee Signature

Date

All training and qualification requirements are satisfied.
This individual can independently perform the tasks in this work assignment.

Section Leader or Designee Signature

Date

NAME: _____

SSN: _____

JOB PERFORMANCE MEASURE

Task Number **Task Statement**

ACU26 Check the operation of the CO2 storage refrigeration unit

JPM Terminal Performance Objective :

Using the appropriate references the HVAC technician will inspect the CO2 refrigeration skid, check oil level and refrigerant charge. In accordance with MI# HFP00001.

Knowledge Objectives :

		Evaluator	Date
Discuss good work practices when working on the CO2 A/C Unit.	D	_____	_____
Discuss the requirements for this equipment to support the fire suppression in selected areas in the plant as well as being used in main generator purging before startup and after shutdown.	D	_____	_____

Performance Objectives :

Performs a Pre-job briefing.	P	_____	_____
Obtains all the applicable tools and equipment prior to starting the evaluation.	P	_____	_____
Verifies the equipment to be worked on is the same equipment specified by the maintenance instructions and the multi equipment list. Uses three leg communication and the phonetic alphabet.	P	_____	_____
Performs a visual inspection of the skid to identify oil leaks and proper oil level.	P	_____	_____
Verifies the refrigeration compressor is operating prior to performing the following inspections: Oil level is correct. CO2 tank pressure is within specifications. Refrigerant charge is correct.	P	_____	_____
Performs all activities in and around electrical circuits in accordance with the Palo Verde Maintenance Standards and Expectations and the Palo Verde Safety Manual.	P	_____	_____
Restores the equipment to its normal operating configuration.	P	_____	_____

NAME: _____

SSN: _____

JOB PERFORMANCE MEASURE

Task Number **Task Statement**

ACU32 Check the operation of the Generrex A/C unit

JPM Terminal Performance Objective :

Using the appropriate references the HVAC technician will inspect the Generrex Excitation Cubical A/C Unit In accordance with the work instructions and technical references .

Knowledge Objectives :

		Evaluator	Date
Discuss good work practices when working on the Generrex Excitation Cubical A/C Unit to include: High ambient temperature. High noise Plant trip hazard	D	_____	_____
Discuss the requirements for this equipment to support generator operation and the contingency if the unit is not operating properly.	D	_____	_____

Performance Objectives :

Using reference material Performs a Pre-job briefing	P	_____	_____
Obtains all the applicable tools and equipment prior to starting the evaluation.	P	_____	_____
Verifies the equipment to be worked on is the same equipment specified by the maintenance instructions and the multi equipment list. Uses three leg communication and the phonetic alphabet.	P	_____	_____
Performs all activities in and around electrical circuits in accordance with the Palo Verde Maintenance Standards and Expectations and the Palo Verde Safety Manual.	P	_____	_____
Verifies the unit is cooling the enclosure.	P	_____	_____
Adjusts the temperature controller to achieve the desired setting.	P	_____	_____
Restores the equipment to its normal operating configuration.	P	_____	_____

NAME: _____

SSN: _____

JOB PERFORMANCE MEASURE

Task Number Task Statement

ACU30 Check the operation of the starting air dyer A/C unit

JPM Terminal Performance Objective :

Using the appropriate references the HVAC technician will clean and inspect the aftercoolers and airdryer. In accordance with MI# HHD00005.

Knowledge Objectives :

		Evaluator	Date
Discuss good work practices when working on the starting air dryers.	D	_____	_____
Discuss the requirements for this equipment to support the diesel generator start system.	D	_____	_____

Performance Objectives :

Using reference material Performs a Pre-job briefing	P	_____	_____
Verifies the refrigerant type prior to working on the airdryers	P	_____	_____
Obtains all the applicable tools and equipment prior to starting the evaluation.	P	_____	_____
Verifies the equipment to be worked on is the same equipment specified by the maintenance instructions and the multi equipment list. Uses three leg communication and the phonetic alphabet.	P	_____	_____
Verifies suction pressure is correct for the style dryer and type refrigerant and the suction line is cool to the touch.	P	_____	_____
Performs all activities in and around electrical circuits in accordance with the Palo Verde Maintenance Standards and Expectations and the Palo Verde Safety Manual.	P	_____	_____
Cleans and inspects the airdryer and aftercoolers.	P	_____	_____
Adjusts the hot gas bypass valve and expansion valve to achieve the desired values for the style dryer and type refrigerant.	P	_____	_____
Restores the equipment to its normal operating configuration.	P	_____	_____

NAME: _____

SSN: _____

JOB PERFORMANCE MEASURE

Task Number **Task Statement**

ACU28 Check the operation of the PMUX A/C unit

JPM Terminal Performance Objective :

Using the appropriate references the HVAC technician will inspect and clean the Multiplexer A/C Unit In accordance with the work instructions and technical references .

Knowledge Objectives :

		Evaluator	Date
Discuss why the multiplexer units are considered sensitive equipment and how to exercise caution when working around this equipment.	D	_____	_____
Discuss good work practices when working on the Multiplexer A/C Unit.	D	_____	_____

Performance Objectives :

Using reference material Performs a Pre-job briefing	P	_____	_____
Obtains all the applicable tools and equipment prior to starting the evaluation.	P	_____	_____
Verifies the equipment to be worked on is the same equipment specified by the maintenance instructions and the multi equipment list. Uses three leg communication and the phonetic alphabet.	P	_____	_____
Performs all activities in and around electrical circuits in accordance with the Palo Verde Maintenance Standards and Expectations and the Palo Verde Safety Manual.	P	_____	_____
Replaces filter and cleans condenser coil.	P	_____	_____
Checks for loose connections, degraded components and refrigerant leaks.	P	_____	_____
Adjusts the temperature controller to achieve the desired setting as determined by the equipment requirements.	P	_____	_____
Restores the equipment to its normal operating configuration.	P	_____	_____

NAME: _____

SSN: _____

JOB PERFORMANCE MEASURE

Task Number Task Statement

ACU33 Check the operation of the Gas Turbine A/C unit

JPM Terminal Performance Objective :

Using the appropriate references the HVAC technician will perform annual maintenance on the Gas Turbine Control Room A/C Unit In accordance with the work instructions and technical references .

Knowledge Objectives :

		Evaluator	Date
Discuss good work practices when working on the Gas Turbine Control Room A/C Unit	D	_____	_____

Performance Objectives :

Using reference material Performs a Pre-job briefing	P	_____	_____
Obtains all the applicable tools and equipment prior to starting the evaluation.	P	_____	_____
Verifies the equipment to be worked on is the same equipment specified by the maintenance instructions and the multi equipment list. Uses three leg communication and the phonetic alphabet.	P	_____	_____
Performs all activities in and around electrical circuits in accordance with the Palo Verde Maintenance Standards and Expectations and the Palo Verde Safety Manual.	P	_____	_____
Inspects the unit, checks for loose connections, degraded components and refrigerant leaks.	P	_____	_____
Cleans the outdoor coil.	P	_____	_____
Cleans the indoor coil and replaces the filter.	P	_____	_____
Inspects and adjusts, or replaces the belt.	P	_____	_____
Adjusts the temperature controller to achieve the desired setting as determined by the equipment requirements.	P	_____	_____
Restores the equipment to its normal operating configuration.	P	_____	_____

NAME: _____

SSN: _____

JOB PERFORMANCE MEASURE

Task Number	Task Statement
ACU24	Check the operation of the PAMU A/C unit

JPM Terminal Performance Objective :

Using appropriate references the HVAC technician will inspect, clean, lubricate, and verify proper operation of ACU #1 & #2. In accordance with the work instructions and technical references .

Knowledge Objectives :

		Evaluator	Date
Discuss good work practices when working on the PAMU ACU #1 & #2.	D	_____	_____

Performance Objectives :

Using reference material Performs a Pre-job briefing	P	_____	_____
Obtains all the applicable tools and equipment prior to starting the evaluation.	P	_____	_____
Verifies the equipment to be worked on is the same equipment specified by the maintenance instructions and the multi equipment list. Uses three leg communication and the phonetic alphabet.	P	_____	_____
Performs all activities in and around electrical circuits in accordance with the Palo Verde Maintenance Standards and Expectations and the Palo Verde Safety Manual.	P	_____	_____
Performs visual inspection, check for oil leaks, degraded wiring and/or hardware.	P	_____	_____
Lubes blower motor.	P	_____	_____
Checks and replaces the air filters if required and verifies the condensate pan is clean and drain line is clear.	P	_____	_____
Verify proper control sequence, lag ACU starts when the lead ACU discharge air duct temperature increases approx. 5 degrees F.	P	_____	_____
Adjusts the temperature controller to achieve the desired setting as determined by the equipment requirements.	P	_____	_____
Restores the equipment to its normal operating configuration.	P	_____	_____