

# DACUM Research Chart for Maintenance Technician

## DACUM Panel

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# DACUM Research Chart for Maintenance Technician

Duties		← Tasks →				
<b>A</b>	<b>Maintain Electrical Systems</b>	A-1 Perform diagnostic test (e.g., switchgears)	A-2 Cut electrical power	A-3 R/R electrical transformers	A-4 R/R motors	A-5 R/R lights
	<b>B</b>	<b>Test Equipment for Integrity</b>	B-1 Spark test glass lined reactors	B-2 Check stainless steel reactors for thickness	B-3 Check reactor jacket for thickness	B-4 Check glass lined reactor for thickness
<b>C</b>		<b>Maintain Instrument Systems</b>	B-13 Test boiler low water safety	B-14 Test emergency generators weekly	B-15 Test waste treatment plant process	B-16 Test switchgears semi-annually
	C-1 Troubleshoot all installments of instruments		C-2 Coordinate with departments (e.g., obtain work clearance, LOTO)		C-3 Check equipment calibration (e.g., temperature, pressure, gasses, level, flow)	
	C-9 Clean up work site		C-10 Order replacement parts	C-11 Replace insulation on equipment	C-12 Install new equipment as determined by Engineering or by installation logs	
<b>D</b>	<b>Maintain Nitrogen Systems</b>	D-1 Change nitrogen gauges	D-2 Change nitrogen regulators	D-3 Change nitrogen filters	D-4 Change nitrogen flow meters	D-5 R/R nitrogen skid gauges
<b>E</b>	<b>Maintain Cooling System</b>	E-1 Take systems gauge readings	E-2 Clean cooling system water filters	E-3 Check chemical treatment system	E-4 Check sludge removal system	E-5 Check belts and bearings on cooling tower fans
<b>F</b>	<b>Maintain Air Compressor Systems</b>	F-1 Change compressor oil filter	F-2 Change compressor oil	F-3 Rebuild air compressors	F-4 Change air dryer desiccant	F-5 Change air dryer filters
<b>G</b>	<b>Maintain Refrigeration System</b>	G-1 Check circulation pumps	G-2 Check electricity to units	G-3 Maintain oil level	G-4 Check refrigeration pressure readings	G-5 Check motor current readings
		G-13 Clean refrigeration condenser	G-14 Clean evaporators in unit	G-15 Change compressors	G-16 R/R microprocessor in chiller	G-17 Replace compressor seals in units
<b>H</b>	<b>Maintain Heating System</b>	H-1 Take boiler system readings	H-2 Perform water boiler test	H-3 Mix water treatment chemicals	H-4 Blow down steam boilers	H-5 Check water system for leaks
		H-13 R/R hot oil Glycol motors	H-14 Clean Glycol radiator	H-15 Check steam traps	H-16 Replace steam traps	H-17 Check condensate system

A-6 Run electrical wire	A-7 Replace thermal overloads	A-8 Notify department of "power-on"	A-9 Demonstrate the appropriate electronics skills			
B-6 Conduct reactor pressure test	B-7 Conduct reactor vacuum test	B-8 Test for process pipe thickness	B-9 Test for utility pipe thickness	B-10 Conduct hydro test of utility pipe	B-11 Conduct hydro test of process pipe	B-12 Test fire evacuation equipment
B-18 Conduct infrared test of electrical components annually						
C-4 Adjust equipment calibration (e.g., temperature, pressure, gasses)		C-5 Replace instrument I/P	C-6 Recheck equipment calibration (e.g., temperature, pressure, gasses)		C-7 Conduct final equipment system check	C-8 Notify department personnel of completed work
D-6 Check tank farm nitrogen blanketing	D-7 R/R nitrogen piping	D-8 R/R skid micro processor				
E-6 Check for cooling system leaks	E-7 Check cooling tower fill	E-8 Clean cooling towers				
F-6 R/R air compressor after-cooler	F-7 Replace compressors	F-8 Check air line oilers/traps				
G-6 Check for freon leaks	G-7 Repair freon leaks	G-8 Charge units with freon	G-9 Replace belts and bearings	G-10 Grease bearings to various units	G-11 Change filters in units	G-12 Clean suction filters
G-18 Replace refrigerator pressure relief valve annually						
H-6 Check steam system for leaks	H-7 Test boiler system safety switches	H-8 R/R steam regulators	H-9 R/R water circulation pumps	H-10 R/R chemical pumps	H-11 R/R piping and valves	H-12 R/R electrical components
H-18 Replace system gaskets	H-19 Filter hot oil system	H-20 Change hot oil filters	H-21 Clean blower motors			

**Duties**

**Tasks**

**I**

**Maintain Reactors**

I-1 R/R reactor power double mechanical seal	I-2 R/R reactor bottom valves	I-3 Check validity of work orders	I-4 Replace reactor baffle	I-5 Replace reactor agitator
I-6 Replace reactor PRV valves	I-7 R/R reactor utility pipe	I-8 R/R reactor utility valve	I-9 R/R reactor process valve	I-10 R/R reactor pikheaters
I-11 R/R reactor condensers	I-12 R/R reactor flame arrestors	I-13 R/R reactor drive motors	I-14 R/R reactor process pipe	I-15 Replace reactor electrical drive
I-16 R/R reactor gear reducer	I-17 R/R reactor centrifugal pump	I-18 R/R reactor pro ring	I-19 R/R reactor hatch	I-20 R/R reactor bell housing
I-21 Replace reactor rupture disk	I-22 R/R reactor BSAL	I-23 R/R reactor vessel		

**J**

**Maintain Vacuum Pumps**

J-1 Replace bearing housing	J-2 Replace bearing housing	J-3 Replace vacuum pump rotors	J-4 Replace backing plate	J-5 Shim rotor bearings
J-6 Replace timing gear	J-7 Set rotor timing	J-8 R/R heat exchanger	J-9 R/R flow switches (e.g., water, nitrogen)	J-10 Replace sight glasses
J-11 Replace motor couplings	J-12 Steam clean vacuum pump/blowers			

**K**

**Maintain System Centrifuge**

K-1 R/R lid latches/locks	K-2 Pull/install centrifuge baskets for inspection	K-3 Change hydraulic oil	K-4 Change hydraulic filter	K-5 Replace hydraulic system components
K-6 Clean/replace speed sensors	K-7 Check/replace out-of-balance/vibration switches	K-8 Check/replace proximity switches	K-9 Check/replace weight cells	K-10 Calibrate hydraulic variable speed drive
K-11 Program hydraulic variable speed drive				

**L**

**Maintain Dryer System**

L-1 Replace dryer seals	L-2 R/R hatch bolts	L-3 Replace timing belts	L-4 Replace trunnion packing	L-5 Fabricate charge chutes
				L-6 Fabricate charge platforms

M	<b>Maintain Maintenance Tools</b>	M-1 R/R hand tools	M-2 R/R power tools	M-3 R/R grounds keeping equipment		
		N	<b>Participate in Professional Development</b>	N-1 Attend job skill training	N-2 Attend mandatory safety training	N-3 Attend regulator training (e.g., OSHA, FDA, RCRA)

### General Knowledge and Skills

Pipefitting  
 Lathe skills  
 Welding skills  
 Blueprint reading  
 Fabricating  
 Electrical skills  
 Mechanical aptitude  
 Analytical skills  
 Troubleshooting skills  
 Time management skills  
 Preventive maintenance knowledge

### Worker Behaviors

Trainable  
 Good work habits  
 Team player  
 Self-motivated  
 Aggressive worker  
 Friendly  
 Flexible  
 Honest  
 Committed  
 Reliable  
 Confident  
 Resourceful  
 Sense of humor  
 Safety oriented

### Tools, Equipment, Supplies and Materials

Calibration test equipment	Micrometer
Power tools	Computers
Reference manuals	Thickness testers
Pipe threader	Spark testers
Pagers	Mil thickness gauge
Two-way radios	Audio leak tester
Welders (all types)	Drill press
Plasma cutters	Fork lift
Oxyacetylene torch	Safety equipment
Volt ohm meter	Rigging

### Future Trends and Concerns

Trends:  
 Facilities improvements  
 Plant expansions  
 More schooling/training  
 More computers  
 More high-tech  
 Higher company profits  
 Higher product demand  
 Increased work loads

Concerns:  
 Management changes  
 Safety concerns

### Acronyms

BSAL	Below surface addition line
R/R	Repair or replace
LOTO	Lockout/tagout
PRV	Pressure relief valve
I/P	Transducer that converts electrical current to pressure