Biodiesel Maintenance Technician
Job Guide

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DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Review/understand plant safety requirements **2 Obtain/maintain/correctly use all PPE** **3 Comply with all LO/TO requirements/verify LO/TO is** **4 Follow formal pipe break-in procedures** **5 Properly use and store process chemicals** **6 Properly respond to spilled/leaking process chemicals** **7 Review/follow emergency action plan** **8 Follow forklift/alternate transportation safety requirements (AT)** **9 Follow arc-flash safety requirements** **10 Follow fall protection requirements** **11 Follow hearing protection requirements** **12 Comply with intrinsically safe requirements** **13 Correctly use fire extinguishers per approved use requirements** **14 Follow all confined space requirements (entry, exit, watch person, emergency retrieval)** **15 Comply with hot work requirements** **16 Comply with CPR, 1st aid/blood borne pathogen requirements** **17 Ensure plant housekeeping is**	Know safety SOPs/MSDS Know location of all safety SOPs Know to attend and participate in all plant safety meetings Know correct storage methods for PPE Know correct PM schedule/correct PM procedures for PPE Know correct use of all PPE Know correct LO/TO procedures Know to use plant supplied LO/TO/ personal LO/TO equipment Know to follow LO/TO procedure Know to correctly use/store process chemicals Know correct PPE to use Know how to read P and IDs Know how to use and properly store process chemicals Know correct spill reporting procedure Know how to isolate and cleanup small spills Know work areas that are intrinsically safe/use proper radios, flashlights, tools Know to monitor air, use correct PPE, follow safety guidelines Know plant specific plan, SOPs Know to follow prescribed forklift training Know all arc-flash safety SOPs/ required PPE Know how to use fall protection equipment/follow all SOPs Know decibel level requirements for all work areas Know to use appropriate protection per decibel level/time requirements	air monitors back straps chains cleats on boots fall protection fire extinguishers first aid kit gloves harness hoists intrinsically safe equipment locks MSDS data P & IDs permits PPE retrieval rigs rigging SOPs self contained breathing apparatus (SCBA) spill kits tags	electrical safety skills mechanical safety skills reading/interpretation skills observation skills

DO	KNOW	EQUIPMENT NEEDED	SKILLS
mandatory **18 Follow correct manual lifting procedures** **19 Follow tank walking/step safety requirements (inclement weather)** **20 Open/close steam valves per safety requirements** **21 Follow inert gas safety requirements** **22 Comply with MSDS data** **23 Comply with all electrical requirements**	Know work areas that are intrinsically safe/use proper radios, radios, flashlights, tools Know correct fire extinguisher use per training Know to monitor air, use correct PPE, follow all safety guidelines Know all hot work permit requirements Know to follow all CPR training/pathogen training Know to follow plant cleaning SOPs know correct back safety/leg use Know inclement weather increases danger Know inclement weather SOPS/correct footwear Know steam system safety Know/understand H_2O hammer effects Know nitrogen safety requirements/danger Know how to interpret material Know requirements Know fundamentals of electricity		

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Receive notice that a problem exists **2 Gather appropriate PPE** **3 Go to Area** **4 Perform overall risk assessment (risk to person/property)** **5 Reduce immediate risk if possible** **6 Perform electrical troubleshooting process** **7 Perform mechanical troubleshooting process** **8 Develop a repair plan (who, what, where when, why/how much)** **9 Discuss repair plan with key individuals (shift change meeting included** **10 Work the plan** **11 Assess repair success** **12 Complete documentation** **13 Perform root cause analysis** **14 Participate in the elimination of the root cause ASAP**	Know email system Know use of phone system Know to attend between shift meetings Know required PPE per work site requirements Know plant layout Know what is normal and what is not Know potential consequences of abnormal operations Know to eliminate fire risk Know to eliminate pollution risk Know how to use HMI Know correct operation of all equipment/AC and DC fundamentals Know mechanical fundamentals Know how to develop a repair plan Know how to budget repairs Know how to implement the repair plan Know how to perform in a team environment Know how to determine the success of plan Know how to perform a root cause analysis Know how to use HMI	drawings arc-flash equipment analysis checklist basic tool kits computers DVDs electrical schematics eyes, ears, nose, hands HMI liquid spill kit multimeters radio SOPs	analytical skills computer skills electrical skills hydraulic skills basic math organizational skills pneumatic skills planning skills problem solving skills

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Maintain positive displacement pumps **2 Maintain centrifical pumps** **3 Maintain American Institute tanks** **4 Maintain plastic tank** **5 Maintain methanol tanks** **6 Maintain sodium methylate tanks** **7 Maintain flow transmitters** **8 Maintain level transmitters** **9 Maintain pressure transmitters** **10 Maintain level switches** **11 Maintain pressure sensitive valves** **12 Maintain pressure regulating valves** **13 Maintain hand valves (ball, globe, gate. butterfly valves)** **14 Maintain flow switches** **15 Maintain acid scrubbers** **16 Maintain heat trace** **17 Maintain flame arresters (flare)** **18 Maintain pipe integrities/insulation** **19 Maintain lighting** **20 Maintain safety rack** **21 Maintain valve actuaters** **22 Maintain spill containment structures/valves**	Know P & I Ds/Drawings Know chemical handling procedures Know how to trouble shoot problems Know correct parameters Know correct pump operation Know purpose of system Know correct operating procedures Know how to evaluate integrity of tank/structure/pipe welds and joints Know to refer to/use manufacturers manuals Know correct repair/replacement procedures Know when/how to contact vendors Know all safety procedures Know how to oversee/manage contractor Know how to perform pH test	basic tool kits drawings DVDs HMI lifting and rigging equipment pallet jack/forklift	basic math calibration skills electrical evaluating skills lab skills mechanical skills problem solving skills setting up skills

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Maintain plate and frame heat exchangers **2 Maintain temperature control valves** **3 Maintain shell and tube heat exchangers** **4 Maintain centrifugal pumps** **5 Maintain binary feed columns** **6 Maintain sock filters** **7 Maintain absorbent filters** **8 Maintain agitators** **9 Maintain motorized augers** **10 Maintain steam vacuum systems** **11 Maintain centrifuge** **12 Maintain positive displacement pumps** **13 Maintain caustic/acid tanks** **14 Maintain pressure relive valves** **15 Maintain flow control valves** **16 Maintain static mixer** **17 Maintain level control valves** **18 Maintain level transmitters** **19 Maintain hand valves (ball, globe, gate. Butterfly, needle valves)** **20 Maintain check valves** **21 Maintain high pressure steam generator** **22 Maintain tanks/vessels** **23 Maintain valve actuators** **24 Maintain pipe/heat trace/insulation**	Know P & IDs Know chemical handling procedures Know correct operating procedures Know purpose of system Know operating parameters Know to evaluate integrity of tank/structure/pipe welds and joints Know correct repair/replacement Know to refer to/use manufacturers' manuals Know when/how to contact vendors Know how to oversee/manage contractors Know all safety procedures	basic tool kits DVDs drawings HMI lifting and rigging equipment pallet jack/forklift	basic math calibration skills electrical skills evaluating skills lab skills mechanical skills

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Maintain centrifugal pumps **2 Maintain sock filters** **3 Maintain shell and tube heat exchangers** **4 Maintain vessels and tanks** **5 Maintain agitators** **6 Maintain static mixers** **7 Maintain positive displacement pumps** **8 Maintain vacuum pumps** **9 Maintain cyclones** **10 Maintain binary columns** **11 Maintain plate and frame heat exchangers** **12 Maintain flow transmitters** **13 Maintain flow control valves** **14 Maintain temp transmitters** **15 Maintain temp control valves** **16 Maintain pressure transmitters** **17 Maintain pressure control valves** **18 Maintain pressure sensitive valves** **19 Maintain methanol detector** **20 Maintain centrifugal pumps** **21 Maintain air actuated valves (ball, butterfly, needle)** **22 Maintain absorbers** **23 Maintain hand valves (ball, globe, gate. butterfly valves)** **24 Maintain check valves** **25 Maintain lighting**	Know all safety procedures Know the purpose of the system Know to read P and IDs/drawings Know chemical handling procedure Know correct operating parameters Know correct operating procedures Know to troubleshoot Know to evaluate integrity of tank/structure/pipe welds and joints Know correct repair and replacement procedures Know to refer to manufacturers manuals Know when/how to contact vendors Know how to oversee/manage vendors Know how to calibrate	basic tool kits DVDs drawings HMI metering equipment lifting and rigging equipment pallet jack/forklift	basic math calibration skills electrical skills evaluating skills lab skills mechanical skills problem solving

DO	KNOW	EQUIPMENT NEEDED	SKILLS
26 Maintain horizontal filter **27 Maintain motorized auger**			

CHAPTER F: STORAGE/LOAD OUT

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Maintain American Petroleum Institute tanks **2 Maintain centrifugal pumps** **3 Maintain load out filters** **4 Maintain flow transmitters** **5 Maintain level transmitters** **6 Maintain pressure transmitters** **7 Maintain desiccant packs** **8 Maintain relief valves** **9 Maintain level switches** **10 Maintain hand valves (ball, globe, gate. butterfly valves)** **11 Maintain flow switches** **12 Maintain heat traces** **13 Maintain pipe/insulation integrity** **14 Maintain lighting** **15 Maintain safety racks** **16 Maintain valve actuator**	Know all safety procedures Know P and IDs/drawings Know purpose of the system Know chemical handling procedures Know correct parameters Know current operating procedures Know to troubleshoot Know to evaluate integrity of tank/structure/pipe welds and joints Know correct repair and replacement procedures Know to refer to manufacturers manuals Know when/how to contact vendors Know how to oversee/manage vendors Know when to use non-sparking hand tools	DVDs drawings HMI hand tools lifting and rigging equipment non-sparking tools pallet jack and forklift trucks prints safety equipment (PPE)	electrical skills intrinsically safe skills mechanical problem solving trouble shooting calibration skills basic math lab skills evaluating skills synthesizing skills setting up skills documentation skills.

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Maintain inbound H_20 supply system **2 Maintain inbound H_20 treatment system** **3 Maintain Fire H_20/storage tank system** **4 Maintain RO H_20 system** **5 Maintain soft H_20 system** **6 Maintain domestic H_20 system** **7 Maintain Boiler system** **8 Maintain cooling H_20 system** **9 Conduct water hardness test** **10 Maintain chilled H_20 system** **11 Maintain waste H_20 system** **12 Maintain nitrogen system** **13 Maintain venting/flame system** **14 Maintain pneumatic system** **15 Maintain HVAC system** **16 Maintain natural gas/fuel oil system** **17 Maintain electrical systems** **18 Oversee/interface with contactors**	Know P & I Ds/Drawings Know chemical handling procedures Know how to trouble shoot problems Know correct parameters Know correct pump operation Know purpose of system Know correct operating procedures Know how to evaluate integrity of tank/structure/pipe welds and joints Know to refer to/use manufacturers manuals Know correct repair/replacement procedures Know when/how to contact vendors Know all safety procedures Know how to oversee/manage contractor Know electrical safety Know fundamentals of electricity Know testing equipment Know correct testing procedures/work instructions	basic tool kits DVDs drawings HMI ladders lifting and rigging equipment pallet jack/forklift water testing equipment	evaluating skills lab skills electrical skills mechanical skills problem solving

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Maintain rail system **2 Maintain perimeter fencing/gates** **3 Maintain secondary containment berms** **4 Maintain roads/platforms** **5 Maintain truck scale** **6 Maintain structures** **7 Maintain roofs** **8 Maintain grass/weed control** **9 Maintain pest control program** **10 Remove snow** **11 Maintain exterior lighting**	Know difference between normal and abnormal operation (inspect/evaluate) Know proper maintenance procedures Know correct operation procedures Know when to contact vendors Know how to oversee/manage contractors	basic tool kits cleaning supplies ladders lawn mower pest traps rubber gloves shovels snow blower	basic math calibration skills construction skills electrical skills mechanical skills problem solving

DO	KNOW	EQUIPMENT NEEDED	SKILLS
1 Create a trouble call ticket **2 Complete maintenance work per work order requirements** **3 Enter trouble call data on Computerized Maintenance Management System (CMMS)** **4 Originate request for external maintenance services** **5 Participate in plant equipment inventory** **6 Participate in Plant Failure Mode and Effects Analysis (FMEA)** **7 Participate in scheduled plant maintenance effectiveness study**	Know how to fill-out trouble call ticket Know how to perform maintenance Know how to document via CMMS Know how to enter data on CMMS Know how to fill out forms Know to read P & ID Know to read name plates on equipment Know how to participate in a FMEA Know this reveals how effective our maintenance has been	CMMS computer system documentation experience	communication skills evaluating skills HMI skills root cause analysis problem solving