



## **Welding/Fabrication Competency Profile**

### **SAFETY AND HOUSEKEEPING**

- Wear protective face shields and/or goggles in accordance with job requirements
- Wear safety shoes
- Maintain a clean and safe work station
- Follow emergency procedures
- Follow established procedures for the handling of compressed gases

### **MATERIALS SCIENCE/INSPECTION/TESTING**

- Identify materials
- Test welds
- Control distortion

### **BLUEPRINTS**

- Interpret blueprints
- Interpret welding procedures
- Use measuring devices

### **WELDING FABRICATION**

- Demonstrate knowledge of basic hand tools
- Demonstrate knowledge of power metalworking machinery
- Determine welding sequences
- Fabricate parts
- Fit-up parts
- Weld according to procedures
- Inspect weldments against print specifications
- Evaluate quality of welds

### **SHIELDED METAL ARC WELDING (SMAW)**

- Set up SMAW equipment
- Weld steel structural shapes in all four positions using predetermined welding procedures
- Weld mild steel plate using predetermined welding procedures

### **THERMAL CUTTING**

- Identify the types of fuels and their applications
- Attach regulators to oxygen and fuel gas cylinders
- Attach torch to regulators
- Select proper tip size for job requirements
- Perform system start up procedures
- Light OFC torch using a spark lighter
- Adjust flame for proper cut

- Shut down/secure cutting equipments
- Cut metals using plasma arc cutting (PAC) processes
- Cut metals using carbon arc cutting processes
- Cut metals using manual OFC cutting process
- Pierce holes
- Demonstrate knowledge of the characteristics and functions of CNC plasma cutting systems

### **GAS METAL ARC WELDING (GMAW)**

- Set up GMAW equipment
- Weld steel structured shapes in all four positions using predetermined welding procedures
- Weld mild steel using predetermined welding procedures

### **GAS TUNGSTEN ARC WELDING (GTAW)**

- Set up GTAW equipment
- Weld stainless steel using predetermined welding procedures
- Weld mild steel using predetermined welding procedures
- Weld aluminum using predetermined welding procedures
- Demonstrate knowledge of the characteristics and functions of pulse arc GTAW systems
- Identify GTAW requirements for specialty metals

### **FLUX CORE ARC WELDING (FCAW)**

- Set up FCAW equipment
- Weld mild steel using predetermined welding procedures
- Weld steel structural shapes using predetermined welding procedures