

Alabama Natural Gas Association
Gas Worker
Training & Assessment Program

PLAN B TRAINING TASKS

The topics on this Plan will be covered during training in the next 30 days. You will be evaluated on your possession of the knowledge, skills, and abilities covered in this Plan in approximately 30 days. You need to take personal responsibility to learn these things. Take your Plan with you as you work. Ask questions. Mark the things you have covered in class and in the field. Write in the date when each topic was covered. If you haven't covered a topic five days prior to the end of the 30-day period, ask the supervisor to review this with you.

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Proper Location of Tools & Materials on Truck for Replacement/Restock			
Always familiarize yourself with the truck of the person with whom you are working. Each person organizes their truck slightly differently, and it is critical that you are familiar with the truck and where the tools are so that you will be able to quickly pull tools when they are needed.			
As a newly hired employee, one of your primary tasks will be re-stocking the truck. Do it well. It is a critical job. Our customers depend on us having the needed tools and supplies when we arrive. If we don't it leads to delays, and it could be dangerous.			
Put things back where they go. Always replace <u>clean</u> tools in the location from which they were taken. It is very important that the person driving the truck can find them the next time they need them.			
Don't wait to be asked. If you don't know where it goes, ask. If you put it back in the wrong location, it can lead to a huge problem in an emergency situation when a tool is needed and can't be located.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Pull the needed tools. If you don't spend time learning the truck and where tools are, you won't know where to find the tools. This is particularly important in an emergency.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Emergency Response Plan & Outage Plan			
Be familiar with the company's Emergency Response Plan. Know where it is and the general contents. Understand when you might need to look at the plan to put it into action.			
Be familiar with the company's Outage Plan. Know where it is and the general contents. Understand your role and response in an Outage.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Proper Excavation & Safety Concerns of Working in Confined Spaces			
Understand what other utilities are in the area (should have been spotted before digging)			
Proper shoring			
• Shore box/Build-a-Box • Stick Shoring/End Shoring/Trench boxes			
OSHA standards regarding shoring & sloping (e.g., distances requirements)			
Considerations when working in trenches			
Considerations regarding hazardous atmosphere			
• Test gases before you go down if there is a possible gas source • Sufficient air before going down • Have a fire extinguisher near the hole			
Soil types			
Know your escape route			
Red zone of the equipment being operated - if you are not the person spotting, get away from the red zone. Only one person should be giving signals. Don't talk with your hands.			
Don't be in the bell hole if the bucket is in the bell hole.			
Always have eye contact with the machine operator.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Squeeze off PE Pipe			
Ensure the pipe is clean and free of debris (and tracer wire) where you are squeezing off			
Spray the pipe with static spray or apply soap			
Ground the squeeze off tool with the grounding rod			
Ensure the squeeze off is set for the correct size pipe			
Center the squeeze off			
Use proper procedure and precautions to pinch and release the pipe with the squeeze off			
<i>Note: Weather conditions will impact the properties of the pipe and amount of force it takes.</i>			
Mark the squeeze point (to ensure you don't squeeze in the same point again)			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Abandon/Retire/Kill Services and Mains			
Verify the address matches the work order.			
Make contact with the customer (if appropriate).			
Secure the truck and the work site with cones, signs, strobe lights, and flags as necessary.			
Direct traffic as necessary.			
Put on proper PPE and get fire extinguisher out			
Verify a locate request of other underground utilities has been made, you have a valid locate number, and the other underground utilities have been located.			
Locate the utilities.			
Spot the other utilities if any are in the way.			
Pull up bonding wires (steel) or tracer wire (plastic) in a valve box to locate main			
For retirement of a Steel Main:			
• Verify correct section to be retired			
• Stop off gas in section to be retired using tapping machine, stopper fitting, pinch-off machine, or by turning a valve			
• Release pressure on section to be retired (by opening riser, cutting main) per company procedures			
• Purge using nitrogen, air, or water			
• Use leak detection equipment to ensure it is 0% gas.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
- Seal off/Cap/Fill the end of the retired main (e.g., foam, expansion rubber plug, weld or fuse on caps - depending on type or size of pipe) per company procedures. - Weld end cap on the hot main - Pull stopper/Crack the valve and soap to ensure no leaks. - Add the completion plug onto the stopper fitting. - Wrap or coat the exposed metal.			

For retirement or abandonment of a Plastic Main:

- Verify correct section to be retired
- Dig up and clean the main at the section to be retired.
- Apply static suppressant spray, soapy water, and/or grounding wires (any measures to stop static and avoid sparks).
- Squeeze the pipe off in section to be retired
- Cut the pipe between the squeeze offs
- Make a controlled release of the gas in the retired section per company procedure
- Purge using nitrogen, air, or water
- Use leak detection equipment to ensure it is 0% gas.
- Add end cap to live section
- Fill the end of the retired main (e.g., foam, expansion rubber plug, weld or fuse on caps - depending on type or size of pipe)
- Conduct soap test to verify no leaks

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For retirement or abandonment of a Service:

- Locate the service and verify pressure.
- Dig up the service at or as close to the main as possible
- If the service is bridged (split), kill one at the tee first verifying which section of the tee should be killed.
- Start at the saddle
- Run the tap down until there is no gas. Use grounding procedures per Company procedures (to avoid sparking – potential fire source)
- Purge the service line to be abandoned at the riser
- Make cut and cap per Company procedures
- If no rundown in the tapping tee, do the above without purging. The process must be worked while gas is live. The line will be capped at one end. Once work is completed, soap test the live section to ensure no leaks are present. Make any notifications as appropriate when working on live gas per Company policy.
- If steel, wrap or coat, and brace.
- Remove the riser and meter (if present).
- Put a plug/slug/cap in the old stub per Company procedures.
- Document the meter number and reading.

GPS any exposed lines

Landscape yards as appropriate.

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Purge the Service/Main			
The service/main line must be purged any time there is a disruption or loss of gas or a new line is installed.			
It is purged to ensure all air is removed from the line.			
If a line is not purged and air remains in the line, it poses a disruption and potential danger to you and the customer.			
A specific air/gas mixture will create a potentially combustible situation.			
The Process:			
- Put on appropriate PPE and ensure fire extinguisher is readily accessible. - Open a valve on the line (e.g., service cock) at riser. - Use gas detection equipment (e.g., CGI/GMI/Rover) to measure to ensure 100% gas.			
<i>Note: It may take several minutes to achieve 100% gas, and you may not get a reading of 100% ever. You want to get a reading that is very close to 100% (95%+)</i>			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Install/Renew a Service Line			
Verify address matches work order.			
Secure the truck and the work site with cones, signs, strobe lights, and flags as necessary.			
Determine where the riser will be installed based on customer preference, location of stub out, location of fuel lines from house, and based on City and company codes and ordinances. etc. and National Fuel Gas Code.			
Make contact with customer, identify yourself, and review the purpose of the visit.			
Put on proper PPE and get fire extinguisher out.			
Verify a locate request of other underground utilities has been made, you have a valid locate number, and the other underground utilities have been located.			
Locate utilities or ensure utilities have been located (check ticket to ensure locate date has not expired).			
Spot other underground utilities that may be in conflict with proposed route of service line.			
Take picture of locates or anything else that might be relevant (damaged driveways or sidewalks).			
Identify location of water meter to determine if you will need to locate the water lines going to the house.			
Locate the clean out for sewage to ensure it is not crossed.			
Identify if power is to be placed on same side to determine depth at which gas must be placed and ensure riser is at least three feet from power meter, accessible windows, and vents.			
Pothole or use vacuum excavation to verify without damaging utilities and to determine how deep utilities are to ensure boring does not disturb other utilities.			

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Look for sprinkler systems, sewer, power, invisible dog fences, etc. and anything else that could be disturbed through the installation process.			
Get material needed to do the job off the truck.			
Analyze the situation to determine what measures will be necessary (e.g., plowing, directional boring open trenching) to put the pipe in the ground.			
Riser to Main Method:			
Determine the best path for the service.			
Dig hole for the riser.			
- Run tracer wire using one of two methods: - Connect tracer wire and pipe to the Beckett/Puller/Puller Head/Finger/Sock/Carrot connection on the plow blade if directional boring, install weak link and mud plug/bullet - Feed the tracer wire down the shoot of the blade of the tractor and tie to a stationary object.			
Plow/dig/trench or directional bore from riser hole to right-of-way.			
Disconnect the tracer wire and the pipe from the plow equipment.			
Cut, clean, and chamfer (pencil sharpen), prep pipe for butt/electro fusion and clean pipe again, or cut and clean for amp/met fitting.			
Pull the pipe into the hole (along with the tracer wire) using the plow, direction boring rig, or by hand in the trench and separate tracer wire from riser using ½ (or ¾) inch plastic tubing.			
Stab the riser, perform the fusion, or install amp/met fitting at the riser.			
Set riser and fill the riser hole with dirt and tamp/pack.			
Dig the main up.			

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- If it is a plastic main:

- Clean and scrape/peel/sand the main and clean with alcohol. *Note: Do not touch cleaned area with anything (bare hands, gloves, dirt, etc.) Only use lint free rags.*
- Put tee on the main using clamp and electrofusion machine or saddle fusion machine/side winder.
- Chamfer (pencil sharpen) the end of the EFV on the outlet side of the tee or prepare for butt fusion. Clean it (soap or alcohol)
- Measure and mark travel distance/stab depth. Stab the coupling to the EFV, connect with butt fusion, or connect with amp/met.
 - *Note: Check the flow direction of the EFV to ensure you are installing it in the correct direction.*

- If it is a steel main:

- Check the main for pitting and wall thickness
- Clean a spot on the main large enough for a tee. It must be cleaned down to the bare steel.
- Use a Pipe to Soil (P.S.) meter to take a pipe to soil potential reading *or* get a CP reading using a voltmeter and record it per Company standards.
- Ensure proper personal protective equipment is on and fire extinguisher is present and personnel have been designated as a dedicated fire watch.
- Remove the core and O-ring out of tee.
- Weld the tee to the main.
- Allow the weld to cool.

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○ Connect compression fitting (nut and O-ring) to the EFV or transition to plastic through a transition sleeve or a pre-manufactured steel to plastic Noblo/tapping tee and attach the EFV to the transition sleeve or the plastic end of the transition Noblo/tapping tee. (Ensure EFV is turned in correct direction.) ○ Chamfer (pencil sharpen) the end of the EFV and clean it with alcohol or soap. ○ Measure, mark, and stab the EFV, connect with butt/electro fusion, or connect with amp/met. ● Dig out from under the service to ensure the service will lay flat (no pinch points). ● Bed the pipe with dirt. ● Install supportive device to support plastic to steel transition area to ensure the weight of the backfilled soil doesn't cause the pipe to bend or kink. ● Measure the service to the stab fitting or amp/met for the correct length and cut. ● Chamfer (pencil sharpen) the end of the service, clean, and connect (stab in) to the stab fitting or clean and connect the amp/met. ● For a plastic main: Electrofuse or butt fuse the service line kit tee to the main. ● Write name and other required information on the main on every fusion made. ● For plastic: Connect tracer wires. ● For cast iron or steel: Cadweld or wrap wire to/around pipe. ● Conduct pressure test (air test) to 1.5 times of operating pressure on service using pressure chart. ● Soap test all fittings and service tee for potential leaks. ● Let air test off service.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
- Put on appropriate fire retardant PPE as required before tapping. - Tap the service with fire extinguisher near-by and designated fire watch. - For steel main, wrap the main and the tee. - Protect main with rock shield/guard if necessary. - Purge air from the riser. - Check service with gas detection equipment.			

Main to Riser Method:

- Dig the main up.
- Prepare the riser.
- Flow, directional bore, etc. and put the pipe, tracer wire, and tape (if used) in the ground.
- Connect the riser to the pipe.
- Set riser and fill in trench and tamp.
- Clean and prepare the main for the tap.
- If the main is steel or cast iron, determine the tee and saddle that should be used and install both to the main.
- For plastic: Connect tracer wires.
- For cast iron or steel: Cad weld wire to pipe or wrap around NoBlo.
- If the main is plastic, install the tapping saddle, NoBlo, or tapping tee to the main.
- Install an EFV and tie the service into the tee.
- Conduct an air test using pressure chart.

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
• Put on appropriate fire retardant PPE as required before tapping.			
• Tap the main.			
• Soap test all fittings for potential leaks and repair any leaks identified.			
• If steel, wrap exposed pipe.			
• Place wedges under the saddle to support the main.			
• Purge the air out of the service line.			
Add EFV tag to riser.			
Add company identification tag to riser.			
Purge line to ensure gas is present or use leak detection equipment (GMI, CGI) to ensure it is 100% gas.			
Write name and other pertinent information on the main.			
Drop marker ball underneath the tee or GPS the tap and service line.			
Take a measurement from the tapping tee to the nearest intersecting street and from the back of the curb to the tapping tee and record on appropriate form.			
Take pictures of service for documentation.			
Safe-in service line and tracer wire to ensure they remain uniform and together before backfill.			
Backfill the trench/hole.			
Set the meter/meter bar.			
Set appropriate regulator pressure.			
Soap test meter loop to check all fittings for leaks.			

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Record the meter number and ERT.			
Place locate flags on new services.			
Landscape the construction area as necessary.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Pressure Test Services and Mains			
Discuss when and why you would use a pressure test for services and mains			
Discuss the types of pressure tests – air test, nitrogen test, hydrostatic test			
Demonstrate the proper procedure for air testing, nitrogen testing, and hydrostatic testing services and mains and the appropriate applications for each			
Discuss the requirements for air tests (duration of test) based on pipe size and length of main and service (per chart)			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Bar Hole Testing			
Bar Hole Testing is a technique for pinpointing leaks by putting holes in the ground and measuring the amount of gas detected until you identify the area with the highest percentage of gas.			
To bar hole test, you place holes in the ground using a probe rod (if in grass) or drill (if in concrete) to allow gas readings to be taken.			
You bar hole test when you suspect a leak and need to pinpoint the more precise location of the leak.			
Safety precautions ~ Don't go too deep. Can puncture a utility. Locate utility lines before bar hole testing.			

Category & Topic	Discussed	Demonstration (Observed)	Field Demonstration (Participated)
Use Gas Detection Equipment			
Discuss when and why you use a Sensit, CGI, rover, GMI			
Discuss the limitations of using the equipment			
Reading LEL, O ₂ , UEL, CO, PPM • How to read • What these mean			
Performing basic machine operations			
Calibration requirements			

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Cut & Thread Pipe

Demonstrate the use of the following:

- Pipe Cutter (multiple wheel cutters – discuss when to use which one)
- Manual Stock and Die/Collar/Handle
- Pipe Vise
- Pipe Reamer

Demonstrate proper applications when cutting and threading pipe

Discuss the number of threads when cutting and threading pipe

Discuss the safety precautions when cutting and threading pipe
