About the Training in this Module

Tools Included in This Module

This module consists of two (2) tools for training new and incumbent operators:

- the training material
- the On-the-Job Training (OJT) checklists

Both the training material and the OJT checklists cover the same procedures, but in different ways. Compare the two in the table below:

Training Material	OJT Checklists
used in non-field training to ***teach*** skills	used in field training to ***verify*** skills
takes in-depth look at each action step of a procedure with photos, equipment and process descriptions	only states the action steps of a procedure
action steps grouped by equipment	action steps grouped by equipment
gives knowledge components that will be used to complete each action step	states knowledge components to be verified during field training

The Training Materials

The trainer and trainee will use the training material during classroom (trainer-guided) sessions.

The training material provides the background knowledge the trainee will use to complete tasks and actions required during the field training sessions.

The OJT Checklists

The trainer and the trainee will use the OJT checklist during the demonstration and skill verification portions of the training.

The checklist identifies all steps the trainee must perform during each procedure, and the success criteria for each.

Knowledge components in the checklist provide reminders and references to information presented in this training module, as well as additional information to be introduced by the trainer during the OJT (such as location of gauges and controls).

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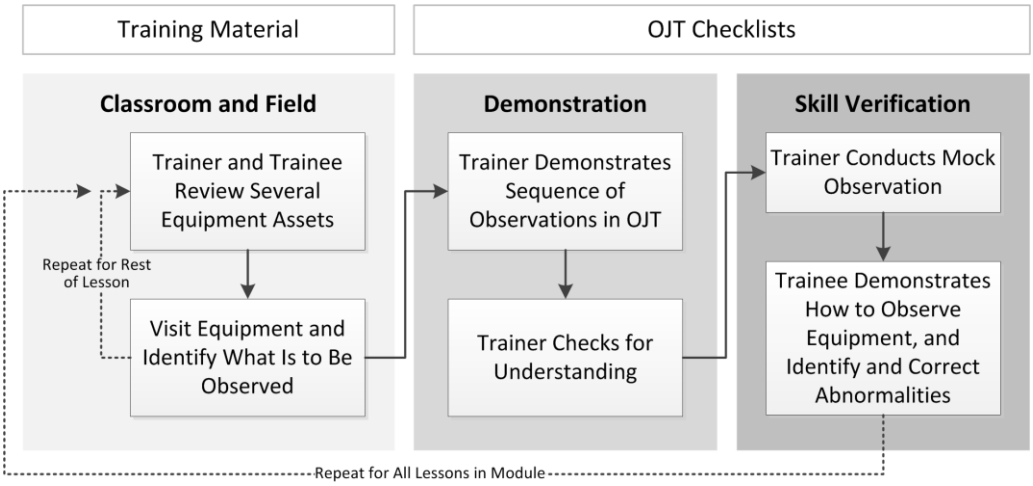
About the Training in this Module, Continued

Suggested Training Sequence

The trainer and the trainee will use the training material and OJT checklists included with this module as follows:



Classroom and Field Training

The observations for each lesson covered in the training material is broken up by ***equipment***. This gives the trainer and the trainee natural stopping points to go out in the field and review the equipment and controls used in that observation.

After all equipment observations in an area are reviewed, the trainer can then move on to the OJT for that area.

Demonstration

The trainer will use the OJT checklist to demonstrate all steps of an observation in the field. During this time, the trainer will review the location and operation of the equipment, controls and gauges used in each step.

The trainer will also allow the trainee the opportunity to perform the observations (when possible) so they gain some hands-on experience performing the steps.

Skill Verification

During the skill verification, the trainer will conduct a mock observation of each equipment asset. The trainer should simulate the conditions of a real observation as much as possible, including filling out observation forms.

The OJT Checklist includes specific success criteria to determine when the operator has completed a task, and whether the task was completed correctly.

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About the Training in this Module, Continued

Skill Verification, (continued)

Both the trainer and the trainee must place their initials in the column beside each action in the OJT checklist when:

- the trainee has completed the section of the training material covering that step
- the trainee has demonstrated they are able to independently meet the success criteria for each of the identified actions

⚠ ***Important:*** It is assumed that that the success criteria outlined in the OJT checklists can be met ***every time*** an operator performs the specific task, not just for final demonstration. He or she is not considered a fully-trained granulation operator until such time.

Support after the Training

After a new operator's skills are verified using the OJT checklists, it is important to observe and support the new operator for a minimum of two (2) weeks.

During this time, the trainer and area management should be aware of opportunities for the new operator to practice observing the abnormalities they learned about in this training.

Example:
If the supervisor knows the cooler feed belt is not functioning properly and spilling granular product, he should have the new operator there to observe (or even fix) the abnormalities.

Chapter 3

On the Job Training (OJT)

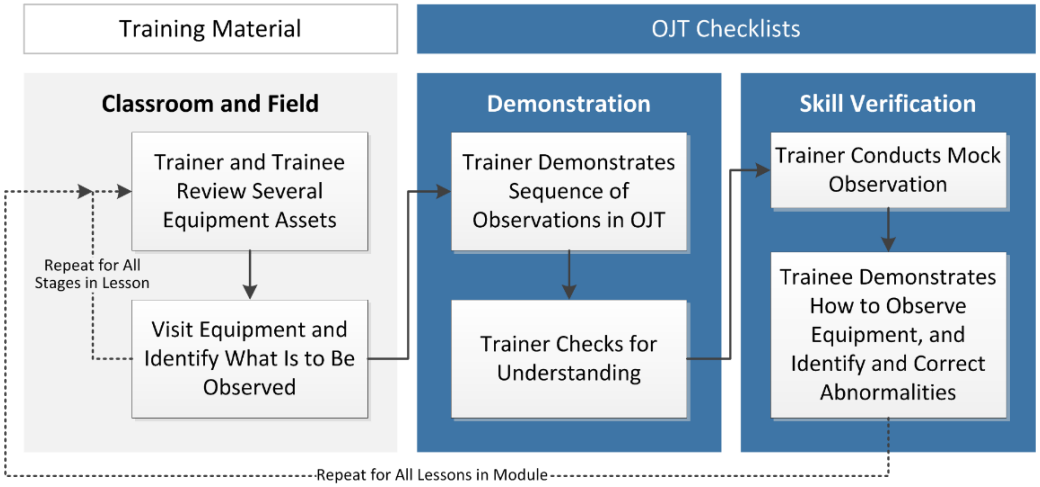
As the operator completes the lessons contained in the accompanying ***A and B-Train Upstairs Rounds and Inspections Training Module***, the operator and trainer will use the checklists that follow to verify competency in the tasks to be performed.

How to Conduct On-the-Job Training

Using the OJT Checklists

When to Use the Checklists

After all stages of a procedure are reviewed in the preceding training material, the trainer and trainee will use the On-the-Job Training (OJT) checklist to conduct a demonstration and a skill verification.



Demonstration

The trainer will demonstrate all steps of an observation in the field. Use the OJT checklist for this demonstration. During the demonstration, the trainer should:

- demonstrate all observations the trainee must make on each part of each equipment asset
- simulate all other steps (including recording bearing temperatures) as though a real observation were taking place
- encourage trainee to take printed training material into the field
- ask questions to verify trainee understanding
- when possible, have the trainee observe real abnormalities, and verify they understand what's happening and how to fix it

Continued on next page

Using the OJT Checklists, Continued

Skill Verification (Mock Rounds)

To verify the trainee has learned the steps in a procedure, the trainer will conduct a mock observation round. Use the OJT checklist for this mock procedure. During the mock observation, the trainer should:

- simulate the conditions of a real observation as much as possible
- simulate radio commands as prompts for trainee to complete a step, if applicable
- have the trainee perform steps fully when possible, including identifying and correcting abnormalities
- simulate all other steps (including recording bearing temperatures) as though a real observation were taking place

Skill Verification (OJT Signoff)

The checklist includes specific success criteria to determine when the operator has completed a task—and whether the task was completed correctly.

As each step on the checklist is completed independently and correctly during the skill verification, the trainer and the trainee date and initial the step.

OJT Checklist: Observe Equipment in the A and B-Train Upstairs Work Area

About this Checklist

Field Training Objective

Given the appropriate materials, equipment and tools, the operator will be able to safely and independently:

- observe and monitor the health of equipment assets in the A and B-train upstairs work area
- diagnose equipment problems
- take corrective actions to improve equipment reliability

How to Use This Checklist

You will use the following checklist several times before your final skill verification. While using this checklist, you will:

- listen to the trainer's explanation of each step listed and watch the steps as they are demonstrated
- practice the steps as much as necessary; ask trainer for suggestions / advice
- when you are comfortable with your ability to independently complete your steps from the checklist, you will perform the steps in the trainer's presence without assistance or input

Choosing A-Train or B-Train for Equipment Observation

For each equipment observation, the trainer and trainee will choose either the A or B-train upstairs work area.

Sign-off for the observation of both is not required. However, the trainer will discuss any equipment or orientation differences during training.

Qualification

As you complete a step independently and to the satisfaction of the trainer, you and the trainer will date and initial the step.

When the trainer is satisfied the success criteria for all steps have been met, you and the trainer will use the qualification signoff sheet at the end of this checklist to verify you are qualified to perform the work required in this procedure.

Sequences in this Checklist

Continued on next page

About this Checklist, Continued

Sequences in this Checklist, (continued)

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Sequence 1:
Observe the Quench Air Fan

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the quench air fan	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of the quench air fan: • drive motor • belt guard/hosing • bearing housings	how to identify parts and orientation of this equipment	operator can identify the equipment parts			
4.	describe the function of the quench air fan	purpose and operation of quench air fan	operator can describe purpose and operation of a quench air fan: • mixes ambient air with hot burner gas • reduces dryer combustion gas temperature • prevents granular product from melting			
5.	observe the drive motor: ***Listen*** for abnormal sounds or vibrations	how to identify normal drive motor operation: • no unusual noises and motor operation should be smooth	operator can identify normal drive motor operation			
6.	***Measure Temperature*** of the bearing housings using an infrared sensing gun	how to use infrared sensing gun maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator aims beam at a consistent point on the bearing housing each round operator reports excessive temperature to supervisor			

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Sequence 1:
Observe the Quench Air Fan, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
7.	observe the motor-to-fan drive belts: ***Look*** for loose or broken belts ***Listen*** for partially-broken belts slapping against the inside of the belt guard ***Listen*** for squealing belts	how to identify proper belt operation: • quiet • evenly tightened • not slipping • not frayed and fully intact	operator can describe abnormalities: • belt squeal may be an indication of looseness, fan overload, belt glazing or moisture • loose belts will negatively affect the fan's performance and will eventually fail			

Sequence 2:
Observe the Chain Mills

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the chain mills	orientation of A and B-train upstairs work areas	operator can locate this equipment operator can identify north, south, middle chain mills			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of a chain mill: • drive motor (2 per chain mill) • belt guard/hosing • bearings (4 per chain mill)	how to identify parts and orientation of this equipment	operator can identify the equipment parts			
4.	describe the function of the chain mills	purpose and operation of chain mills	operator can describe purpose and operation of a chain mill: • fed oversize material from the process screens • breaks up oversized material • discharges to the secondary recycle elevator to granulator			
Choose Any One (1) Chain Mill to Perform the Following Observations:						
5.	observe the drive motor: ***Listen*** for abnormal sounds or vibrations	how to identify normal drive motor operation: • no unusual noises and motor operation should be smooth	operator can identify normal drive motor operation			

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Sequence 2:
Observe the Chain Mills, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
6.	***Measure Temperature*** of the bearing housings using an infrared sensing gun	how to use infrared sensing gun maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator aims beam at a consistent point on the bearing housing each round operator reports excessive temperature to supervisor			
7.	observe the motor-to-mill drive belts: ***Look*** for loose or broken belts ***Listen*** for partially-broken belts slapping against the inside of the belt guard ***Listen*** for squealing belts	how to identify proper belt operation: • quiet • evenly tightened • not slipping • not frayed and fully intact	operator can describe abnormalities: • belt squeal may be an indication of looseness, fan overload, belt glazing or moisture • loose belts will negatively affect the mill's performance and will eventually fail			
8.	observe area around equipment for product leaks: ***Look*** for product solids coming from the doors or the gaps at the rotor shafts ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of recycle chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			

Sequence 3:
Observe Cooler Feed Trays

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the cooler	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of a cooler: • cooler tray doors • cooler trays (3)	parts and operation	operator can identify the equipment parts			
4.	describe the function of the cooler	purpose and operation of cooler	operator can describe purpose and operation of a cooler: • granular product gravity-falls through trays • trays contain circular holes to distribute product flow evenly downward • granular product is cooled by ambient air pulled by the cooler fans			
5.	observe product bed depth: ***Look*** at how deep the product bed is on all three (3) cooler tray levels ***Look*** for uniform solids flow across all three (3) cooler tray levels	how to determine if solids are flowing evenly across the screen how to measure bed depth	operator can identify bed depth of one to two inches (1in – 2in)			
6.	inspect trays for blockage and plugging: ***Look*** for oversized or clumped material blocking or plugging the holes on all three (3) cooler tray levels	how to identify oversize product or blockage how to identify even flow across entire screen how to remove product blockage (shovel and wheelbarrow	operator can: • determine if product solids are uniform in size and shape • identify and remove oversize solids or blockage			

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Sequence 3:
Observe Cooler Feed Trays, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
7.	describe what can happen if tray holes become blocked or plugged	the affects of blocked cooler tray distribution holes	operator can describe anomalies: • restricted air flow can impact product cooling and scrubber performance • product spillage due to increased bed height or uneven product distribution			
8.	observe area around equipment for product leaks: ***Look*** for product solids coming from the cooler tray doors ***Look*** for product solids buildup on the floor	what product leaks and spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of recycle chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			
9.	close and secure cooler tray doors	operation of cooler tray doors and latch what to do if doors cannot be closed and secured	cooler tray doors are closed operator can describe what to do if doors cannot be closed and secured			

Sequence 4:
Observe Cooler Feed Belt

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the cooler feed belt	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of the cooler feed belt: • belt • rollers • skirting • drive motor and gearbox • belt guard/housing • head and tail pulleys	parts and operation	operator can identify the equipment parts			
4.	describe the function of the cooler feed belt	purpose and operation of cooler feed belt	operator can describe purpose and operation of a cooler feed belt: • carries granular product from the process screens to the polishing screen • runs south-to-north			
5.	observe the conveyor belt: ***Look*** for belt alignment and smooth operation ***Look*** for visual signs of vibrations or other abnormal operation ***Listen*** for unusual noises or belt vibrations ***Inspect*** the belt for fraying or tearing	how to identify proper belt operation: • belt is centered • operating smoothly with no vibrations how to track misaligned conveyor belts	operator can identify and correct belt abnormalities			
6.	observe rollers and idlers: ***Look*** for smooth rotation and operation ***Look*** for belt wear caused by rollers and idlers	how to identify proper roller and idler operation: • rotating smoothly • never be stationary while in contact with the conveyor belt	operator can identify and correct roller and idler abnormalities			

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Sequence 4:
Observe Cooler Feed Belt, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
7.	observe belt drive components: ***Inspect*** the conveyor drive, coupling, lagging, head and tail pulleys ***Look*** for smooth rotation and operation ***Look*** at the lagging to ensure it is not worn ***Look*** for visual signs of vibrations or other abnormal operation	how to identify proper belt drive operation: • rotating smoothly with no vibrations • lagging should not be worn	operator can describe abnormalities: • worn lagging can cause slippage and premature belt wear operator can identify and correct abnormalities			
8.	***Measure Temperature*** of all bearings on the conveyor assembly using an infrared sensing gun	how to use infrared sensing gun maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator aims beam at a consistent point on the bearing housing each round operator reports excessive temperature to supervisor			
9.	observe area around equipment for product leaks: ***Look*** for product solids coming from the belt ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of recycle chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			

Sequence 5:
Observe the Fines Screw Conveyor

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the fines screw conveyor	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of the fines screw conveyor: • drive motor and gear box • belt guard/housing • doors (flanges) • bearing housing	parts and operation	operator can identify the equipment parts			
4.	describe the function of the cooler fines screw conveyor	purpose and operation of fines screw conveyor	operator can describe purpose and operation of a fines screw: • fines from the polishing screens gravity-falls onto the fines screw conveyor • discharges to secondary (recycle) elevator			
5.	observe the drive motor: ***Listen*** for abnormal sounds or vibrations	how to identify normal drive motor operation: • no unusual noises and motor operation should be smooth	operator can identify normal drive motor operation			
6.	***Measure Temperature*** of the bearing housings using an infrared sensing gun	how to use infrared sensing gun maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator aims beam at a consistent point on the bearing housing each round operator reports excessive temperature to supervisor			

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Sequence 5:
Observe the Fines Screw Conveyor, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
7.	observe the drive belts: ***Look*** for loose or broken belts ***Listen*** for partially-broken belts slapping against the inside of the belt guard ***Listen*** for squealing belts	how to identify proper belt operation: • quiet • evenly tightened • not slipping • not frayed and fully intact	operator can describe abnormalities: • belt squeal may be an indication of looseness, fan overload, belt glazing or moisture • loose belts will negatively affect performance and will eventually fail			
8.	observe area around equipment for product leaks: ***Look*** for product solids spilling from the doors ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of granulator discharge chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			
9.	close and secure doors	operation of doors and latch what to do if doors cannot be closed and secured	doors are closed operator can describe what to do if doors cannot be closed and secured			

Sequence 6:
Observe Lump Breaker

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the lump breaker	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of the lump breaker: • coupling with guard • gear box • high-speed coupling • breaker arms	parts and operation	operator can identify the equipment parts			
4.	describe the function of the lump breaker	purpose and operation of lump breaker	operator can describe purpose and operation of a lump breaker: • rotating shaft with arms • used to break large solids as they come out of the granulator			
5.	observe the drive motor: ***Listen*** for abnormal sounds or vibrations	how to identify normal drive motor operation: • no unusual noises and motor operation should be smooth	operator can identify normal drive motor operation			
6.	***Measure Temperature*** of the bearing housing using an infrared sensing gun	how to use infrared sensing gun maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator aims beam at a consistent point on the bearing housing each round operator reports excessive temperature to supervisor			

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Sequence 6:
Observe Lump Breaker, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
7.	observe area around equipment for product leaks: ***Look*** for product solids spilling from top of granulator discharge chute ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of granulator discharge chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			

Sequence 7:
Observe Process Screens

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the process screens	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of a process screen: • screen cover • stacked wire meshes (2) • vibrators	parts and operation	operator can identify the equipment parts			
4.	describe the function of the process screen	purpose and operation of process screen	operator can describe: • sifts and separates granular material • differently-sized material takes different paths through the process			
5.	identify and describe the product flows: • name the sizes of material separated in screening process • describe how each size gets separated by the 2 wire meshes inside the process screen • point out where the three differently-sized material exists the process screens	process screen operation	operator can identify and describe these product flows: • ***oversize*** – solids that do not fit through the top mesh • ***product*** – solids that fit through the top mesh, but not the bottom mesh • ***fines*** – solids that fall through the bottom mesh			

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Sequence 7:
Observe Process Screens, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
Choose Any One (1) Process Screen to Perform the Following Observations:						
6.	observe area around equipment for product leaks: ***Look*** for product solids spilling from screen ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of granulator discharge chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			
7.	observe the product flow inside the screens: ***Lift*** each screen cover to observe screen operation ***Look*** for uniform solids flow across top mesh of the three (3) process screens ***Inspect*** the feed gates for flow through the chutes and hoppers	screen cover operation how to identify uniform shape and size of solids how to identify product flowing evenly from chutes how to adjust screen feed gates	operator can identify and correct abnormalities operator can adjust screen feed gates to evenly distribute solids flow			
8.	identify blockage or plugging: ***Lift*** each screen cover to observe screen operation ***Look*** for oversized or clumped material blocking or plugging ductwork feeding the screens ***Look*** for blockage in process screen discharge chutes, oversize-to-chain-mill chutes, product duct, fines hopper	how to identify uniform shape and size of solids how to identify product flowing evenly in all chutes to and from the screens how to eliminate solids flow restrictions: • safely beating on steel feed chutes with sledge hammer • rod-out from a screen inlet duct	operator can identify and correct blockages operator can describe abnormalities: • lumps in system may be caused by missing dryer grizzly bar(s) upstream			

Continued on next page

Sequence 7:
Observe Process Screens, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
9.	observe the vibrators: ***Feel*** vibrators by placing the back of the hand on the vibrator assembly. Never grab the vibrator assembly. ***Look*** at the vibrator shaft to ensure it is connected to the screens	how to identify whether vibrator is vibrating strongly how to identify whether vibrators are set to maximize screen performance	operator always uses back of hand when feeling vibrators, and can describe why: • if electrically charged, touching with palm could cause hand muscles to contract and grab vibrator			
10.	inspect the screen mesh: ***Look*** for holes in the wire mesh	how to observe screen: • use a shovel to block a small section of solids flow until the mesh is visible how to identify visible holes or tears what to do if visible hole or tear detected: • notify board operator	operator can identify and correct abnormalities operator can describe abnormalities: • holes may let oversized product through that may plug other equipment			
11.	close and secure screen covers (doors)	screen cover operation what to do if doors cannot be closed and secured	screen covers are closed operator can describe what to do if covers cannot be closed and secured			

Sequence 8: Observe Polishing Screen

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the polishing screen	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of a polishing screen: • screen cover • wire meshes • vibrators	parts and operation	operator can identify the equipment parts			
4.	describe the function of the polishing screen	purpose and operation of polishing screen	operator can describe: • sifts and separates granular ***product*** from ***fines***			
5.	identify and describe the product flows: • name the sizes of material separated in screening process • describe how each size gets separated by the polishing screen • point out where the two differently-sized material exists the process screens	polishing screen operation	operator can identify and describe these product flows: • ***product*** – solids that fit through the top mesh, but not the bottom mesh • ***fines*** – solids that fall through the bottom mesh			
6.	observe area around equipment for product leaks: ***Look*** for product solids spilling from screen ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of granulator discharge chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			

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Sequence 8:
Observe Polishing Screen, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
7.	observe the product flow inside the screen: ***Lift*** each screen cover to observe screen operation ***Look*** for uniform solids flow across mesh of the polishing screen ***Inspect*** the feed gates for flow through the chutes and hoppers	screen cover operation how to identify uniform shape and size of solids how to identify product flowing evenly from chutes how to adjust screen feed gates	operator can identify and correct abnormalities operator can adjust screen feed gate to evenly distribute solids flow			
8.	identify blockage or plugging: ***Lift*** each screen cover to observe screen operation ***Look*** for oversized or clumped material blocking or plugging ductwork feeding the screen ***Look*** for blockage in polishing screen discharge chutes, oversize-to-cooler trays, fines hopper	how to identify uniform shape and size of solids how to identify product flowing evenly in all chutes to and from the screens how to eliminate solids flow restrictions: • safely beating on steel feed chutes with sledge hammer • rod-out from a screen inlet duct	operator can identify and correct blockages operator can describe abnormalities: • lumps in system may be caused by missing dryer grizzly bar(s) upstream			
9.	observe the vibrators: ***Feel*** vibrators by placing the back of the hand on the vibrator assembly. Never grab the vibrator assembly. ***Look*** at the vibrator shaft to ensure it is connected to the screens	how to identify whether vibrator is vibrating strongly how to identify whether vibrators are set to maximize screen performance	operator always uses back of hand when feeling vibrators, and can describe why: • if electrically charged, touching with palm could cause hand muscles to contract and grab vibrator			

Continued on next page

Sequence 8:
Observe Polishing Screen, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
10.	inspect the screen mesh: ***Look*** for holes in the wire mesh	how to observe screen: • use a shovel to block a small section of solids flow until the mesh is visible how to identify visible holes or tears what to do if visible hole or tear detected: • notify board operator	operator can identify and correct abnormalities operator can describe abnormalities: • holes may let oversized product through that may plug other equipment			
11.	close and secure screen covers (doors)	screen cover operation what to do if doors cannot be closed and secured	screen covers are closed operator can describe what to do if covers cannot be closed and secured			

Sequence 9:
Observe the Cyclones

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the cyclones	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	describe the function of the cyclones	purpose and operation of cyclone	operator can describe purpose and operation of cyclones: • remove solids dust at various points in the process and divert back to granulator • manipulate incoming air to separate solids dust from the air			
Choose Any One (1) Cyclone to Perform the Following Observations:						
4.	check the cyclone vacuum: ***Lift open*** the discharge flapper and allow the flapper to be sucked closed on its own ***Feel*** the discharge piping with the back of your hand	expected behavior of the flapper how to feel cyclone piping	operator verifies cyclone vacuum operator can describe abnormalities: • unresponsive flapper and cool discharge piping may indicate pluggage			
5.	observe product flows: ***Observe*** product flow by lifting open the discharge flapper ***Look*** for product flow visible through the opening	how to identify proper product flow how to identify and remove blockage	operator can identify and correct abnormalities			
6.	observe area around equipment for product leaks: ***Look*** for product solids spilling from equipment ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage where to dispose of product spillage (recycle chute)	operator can: • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			

Sequence 10: Observe the Upstairs Reclaim Belts

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate and identify the upstairs reclaim belts: • CNV-102 • CNV-301	orientation of A and B-train upstairs work areas	operator can locate and identify this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify these parts for each of the conveyor belts (as visible): • drive motor and gear box • tripper discharge system • head and tail pulleys • belt guard/housing • rollers and idlers	parts and operation	operator can identify the equipment parts			
4.	describe the function of the upstairs reclaim belts	purpose and operation of upstairs reclaim belts	operator can describe purpose and operation of the upstairs reclaim belts: • used to re-seed trains with granular material upon startup • used to transfer urea solids from warehouse storage to the TSP bin or filler bin			
5.	observe the conveyor belt: ***Look*** for belt alignment and smooth operation ***Look*** for visual signs of vibrations or other abnormal operation ***Listen*** for unusual noises or belt vibrations ***Inspect*** the belt for fraying or tearing	how to identify proper belt operation: • belt is centered • operating smoothly with no vibrations how to track misaligned conveyor belts	operator can identify and correct belt abnormalities			

Continued on next page

Sequence 10:
Observe the Upstairs Reclaim Belts, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
6.	observe rollers and idlers: ***Look*** for smooth rotation and operation ***Look*** for belt wear caused by rollers and idlers	how to identify proper roller and idler operation: • rotating smoothly • never be stationary while in contact with the conveyor belt	operator can identify and correct roller and idler abnormalities			
7.	observe belt drive components: ***Inspect*** the conveyor drive gear box, coupling, lagging, head and tail pulleys ***Look*** for smooth rotation and operation ***Look*** at the lagging to ensure it is not worn ***Look*** for visual signs of vibrations or other abnormal operation	how to identify proper belt drive operation: • rotating smoothly with no vibrations • lagging should not be worn	operator can describe abnormalities: • worn lagging can cause slippage and premature belt wear operator can identify and correct abnormalities			
8.	***Measure Temperature*** of all bearings on the conveyor assembly using an infrared sensing gun	how to use infrared sensing gun maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator aims beam at a consistent point on the bearing housing each round operator reports excessive temperature to supervisor			
9.	observe area around equipment for product leaks: ***Look*** for product solids coming from the belt ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage (shovel and wheelbarrow) where to dispose of product spillage (location of recycle chute)	operator can: • identify leakage • determine the cause of leakage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			

Sequence 11: Observe Scrubber Hoses

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate and identify each scrubber: • first stage scrubber • second stage scrubber • cooler scrubber • dryer scrubber	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	describe how to safely touch scrubber hoses	how to safely touch scrubber hoses	operator can describe: • gently and quickly touch the hose with open palm • do this along the length of the hose, touching periodically			
Choose Any One (1) Scrubber to Perform the Following Hose Observations:						
4.	observe the flow (hose temperature): ***Feel*** the length of each hose for temperature variations	how to safely touch scrubber hoses	operator can verify temperature is consistent along the entire length of hose			
5.	observe hose leaks: ***Look*** for liquid dripping or spraying from a scrubber hose ***Look*** for torn or frayed hose braids	how to identify a hose in good condition	how to identify and correct abnormalities			

Sequence 12:
Observe Upstairs Duct Work and Piping

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate some examples of upstairs duct work and piping: • inlet and discharge ductwork for dryer, cooler, and dust cyclones • inlet and discharge duct work and piping on all scrubbers • sulfuric and phosphoric acid piping • steam, water, and air piping	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
Walk Throughout Work Area to Perform the Following Observations:						
3.	observe piping: ***Look*** for drips ***Look*** for visible steam ***Look*** for cracks, holes, or other damage ***Listen*** for drips or sprays ***Listen*** for hissing air or steam	how to identify piping leaks	operator can identify corrective actions: • identify leak type and stop leakage if safe • if safe and if possible, stop leaks by tightening valves or blocking-in system • report any condition requiring repair/work to board operator • record any appropriate leaks on RCRA log sheets			
4.	observe duct work: ***Listen*** for hissing air ***Look*** for cracks, holes, or other damage	how to identify duct leaks				

Qualification Signoff for OJT Checklist: Observe Equipment in the A and B-Train Upstairs Work Area

Acknowledgement and Signoff

This section is to be filled out by the trainer and the trainee.

		Initials	
Acknowledgement	**Date**	**Trainee**	**Trainer**
I acknowledge the trainee has been given the appropriate personal protective equipment (PPE) as listed in the Louisiana PPE Matrix and accompanying training material.			
I acknowledge that the trainee has been given access to all documentation identified as being required for completing this checklist, such as LOTO and SCOLs for B-train.			

Checklist Completion

This section is to be filled out by the trainer(s) and the trainee ***only after*** all steps have been performed to the mutual satisfaction of the trainee and the trainer.

	Name and Employee ID (Print)	**Signature**	**Date**
trainee			
trainer 1			
trainer 2			

Remittance

This section is to be filled out by the trainer.

Please Return Completed Checklist and This Form To:

OJT Checklist: Observe Rotating Drums and Elevators in the A and B-Train Upstairs Work Area

About this Checklist

Field Training Objective

Given the appropriate materials, equipment and tools, the operator will be able to safely and independently:

- observe and monitor the health of rotating drums and elevators in the A and B-train upstairs work area
- diagnose equipment problems
- take corrective actions to improve equipment reliability

How to Use This Checklist

You will use the following checklist several times before your final skill verification. While using this checklist, you will:

- listen to the trainer's explanation of each step listed and watch the steps as they are demonstrated
- practice the steps as much as necessary; ask trainer for suggestions / advice
- when you are comfortable with your ability to independently complete your steps from the checklist, you will perform the steps in the trainer's presence without assistance or input

Choosing A-Train or B-Train for Equipment Observation

For each equipment observation, the trainer and trainee will choose either the A or B-train upstairs work area.

Sign-off for the observation of both is not required. However, the trainer will discuss any equipment or orientation differences during training.

Qualification

As you complete a step independently and to the satisfaction of the trainer, you and the trainer will date and initial the step.

When the trainer is satisfied the success criteria for all steps have been met, you and the trainer will use the qualification signoff sheet at the end of this checklist to verify you are qualified to perform the work required in this procedure.

Sequences in this Checklist

Sequence 1:
Observe the Granulator

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate the granulator	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of a granulator: • drive motor and coupling • reducer gear box • pinion and bearing housing • bull gear • oil level sight glass • trunnion guard and bearing housing • thrust roller	parts and operation	operator can identify all equipment parts			
4.	describe the function of the granulator	purpose and operation of granulator	operator can describe purpose and operation of a granulator: • large rotating drum in which granular product is made • reactor slurry and ammonia are sprayed into a bed of granular material			
5.	observe the machine guards: ***Look*** for the guards on the drive motor, motor coupling, and trunnion rollers ***Listen*** for unusual sounds or vibrations	how to identify a secure, in-place machine guard	operator can identify and correct abnormalities: • barricade access to unguarded parts • notify board operator			
6.	observe trunnion and thrust rollers: ***Look*** for cracks or loose bolts in the thrust roller base ***Listen*** for unusual sounds or vibrations	how to identify properly functioning trunnion and thrust rollers	operator can identify and correct abnormalities			

Continued on next page

Sequence 1:
Observe the Granulator, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
7.	***Measure Temperature*** of all twelve (12) bearings shown on the check sheet, using an infrared sensing gun	how to use infrared sensing gun location of all 12 bearings to be measured maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator can identify all 12 bearings operator aims beam at a consistent point on the bearing each round operator records all temperatures on check sheet operator reports temperatures above 140° F or temperature differences greater than 15°F to supervisor			
8.	observe the drive motor and reducer gear box: ***Look*** for cracks or loose bolts in the bases of gearbox, motor, and pinion bearings ***Look*** for oil leaks ***Inspect*** the oil level in the oil level sight glass ***Measure Temperature*** of the side of gearbox using an infrared sensing gun ***Listen*** for unusual sounds or vibrations in motor or coupling	how to identify proper drive motor and reducer gear box operation: • securely fastened to their bases • no missing bolts or cracks • operating smoothly with no unusual vibrations or noises how to identify clean oil at normal level gear reducer maximum temperature (230°F) where to aim sensing beam	operator can identify and correct abnormalities operator can describe oil abnormalities: • low oil level could indicate a leak • high oil level could indicate something entering the console • milky oil color could indicate water intrusion			
9.	observe area around equipment for product leaks: ***Look*** for product solids spilling from granulator discharge chute ***Look*** for product solids buildup on the floor	what product spillage looks like how to remove product spillage where to dispose of product spillage (granulator discharge chute)	operator can: • determine the cause of spillage • remove and dispose of product spillage • notify supervisor if excessive leakage cannot be stopped			

Sequence 2: Observe the Elevators

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
1.	locate and identify the three (3) elevators: • primary elevator • secondary elevator • product elevator	orientation of A and B-train upstairs work areas	operator can locate this equipment			
2.	observe area lighting	how to identify improper lighting or burnt bulbs	operator notifies board operator or shift supervisor if lighting repairs needed			
3.	identify the following parts of an elevator: • drive motor • reducer gear box • sprocket bearing housing • oil level sight glass • backstop • head shaft bearing housings	parts and operation	operator can identify all equipment parts			
4.	describe the function of a backstop	purpose and operation of backstop	operator can describe purpose and operation of a backstop: • contains a ratchet-type sleeve bearing • allows the gear shaft to turn forward • immediately locks if backward motion is detected			
Choose Any One (1) Elevator to Perform the Following Observations:						
5.	observe the machine guards: ***Look*** for the guards on the motor coupling and drive chain ***Listen*** for unusual sounds or vibrations	how to identify a secure, in-place machine guard	operator can identify and correct abnormalities: • barricade access to unguarded parts • notify board operator			

Continued on next page

Sequence 2:
Observe the Elevators, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
6.	observe the drive motor and coupling: ***Look*** for cracks or loose bolts in the base ***Measure Temperature*** of the drive motor using an infrared sensing gun ***Listen*** for unusual sounds or vibrations in motor or coupling	how to identify proper drive motor operation: • securely fastened • no missing bolts or cracks • operating smoothly with no unusual vibrations or noises drive motor maximum temperature (150°F)	operator can identify and address abnormalities			
7.	observe the reducer gear box: ***Look*** for cracks or loose bolts in the bases of gearbox, motor, and pinion bearings ***Look*** for oil leaks ***Inspect*** the oil level in the oil level sight glass ***Measure Temperature*** of the side of gearbox using an infrared sensing gun ***Listen*** for unusual sounds or vibrations in motor or coupling	how to identify proper reducer gear box operation: • securely fastened • no missing bolts or cracks • operating smoothly with no unusual vibrations or noises how to identify clean oil at normal level gear reducer maximum temperature (230°F) where to aim sensing beam	operator can identify and correct abnormalities operator can describe oil abnormalities: • low oil level could indicate a leak • high oil level could indicate something entering the console • milky oil color could indicate water intrusion			
8.	observe the backstop: ***Look*** for visual signs of backstop movement on the gear box shaft ***Look*** to ensure the backstop torque arm is properly secured (if applicable)	how to identify unwanted backstop movement how to identify a properly secured torque arm	operator can identify and address abnormalities			

Continued on next page

Sequence 2:
Observe the Elevators, Continued

					Initials	
Step	**Action**	**Knowledge Components**	**Success Criteria**	**Date**	**Trainee**	**Trainer**
9.	***Measure Temperature*** of bearings shown on the check sheet, using an infrared sensing gun	how to use infrared sensing gun location of bearings to be measured maximum operating temperature for bearings (140° F); what to do if temperature exceeds where to aim sensing beam	operator can identify all bearings operator aims beam at a consistent point on the bearing each round operator records all temperatures on check sheet operator reports temperatures above 140°F			
10.	observe the elevator case and discharge chute: ***Look*** for holes in the elevator case and discharge chute ***Look*** for product solids spilling from the chutes ***Look*** for product solids buildup on the floor	how to identify product spills where to dispose of solids (granulator discharge chute)	operator can identify and address abnormalities: • determine the cause for leakage • involve others if needed, to stop the leakage • remove product spillage using a shovel and wheelbarrow			

Qualification Signoff for OJT Checklist: Observe Rotating Drums and Elevators in the A and B-Train Upstairs Work Area

Acknowledgement and Signoff

This section is to be filled out by the trainer and the trainee.

		Initials	
Acknowledgement	**Date**	**Trainee**	**Trainer**
I acknowledge the trainee has been given the appropriate personal protective equipment (PPE) as listed in the Louisiana PPE Matrix and accompanying training material.			
I acknowledge that the trainee has been given access to all documentation identified as being required for completing this checklist, such as LOTO and SCOLs for B-train.			

Checklist Completion

This section is to be filled out by the trainer(s) and the trainee ***only after*** all steps have been performed to the mutual satisfaction of the trainee and the trainer.

	Name and Employee ID (Print)	**Signature**	**Date**
trainee			
trainer 1			
trainer 2			

Remittance

This section is to be filled out by the trainer.

Please Return Completed Checklist and This Form To: