Job Performance Measure

RO/SRO

Perform 10-Minute Operator Actions per QCARP 0050-01

JPM: In-Plant JPM i.

Date: June 2007

SIMULATOR SETUP INSTRUCTIONS

1. Start this JPM at the Unit 1 Trackway.

2. Ensure you have dosimetry before giving the initiating cue, or stop the clock while obtaining dosimetry.

3. Give the examinee a copy of QCARP 0050-01 Attachment B when you read the initial conditions.

INITIAL CONDITIONS

- You are the Unit 1 NSO.
- The Control Room has been evacuated due to a fire in the Control Room.
- QCOA 0010-12 (Fire/Explosion) is being executed.
- QCARP 0050-01 Immediate Operator Actions and Subsequent Operator Actions D.1 through D.6 have been completed.
- You have been issued a radio.
- **This JPM IS time critical.**

INITIATING CUE

Complete Block 1 of Attachment B of QCARP 0050-01.

Provide examinee with:
Attachment B of QCARP 0050-01

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* * Denotes critical steps.
* • Denotes critical elements of a critical step.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section at the bottom of the page. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

The timeclock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
EVALUATOR NOTE: This JPM is time critical. Get dosimetry BEFORE the start of the JPM or stop the clock while obtaining it. The JPM should be started at Unit 1 Trackway. **The time is started when the cue is acknowledged.**					
*1.a	•At **MCC 15-2 OPENS** breaker at cubicle **H3**, XFMR TO 120/240V INST BUS (RESERVE FD) AND 120 VAC RPS BUSES 1A & 1B (RESERVE FD). •	Positions the breaker to OPEN (OFF)	___	___	___
*1.b	•At **MCC 15-2 OPENS** breaker at cubicle **J3**, 120/240 1Ø-3W RPS BUSSES 1A & 1B RESERVE SPLY.•	Positions the breaker to OPEN (OFF)	___	___	___
*2	•At **MCC 18-2 OPENS** breaker at cubicle **E3**, RPS MG SET 1A, 1-0500-MG1A.•	Positions the breaker to OPEN (OFF)	___	___	___
*3	•At **MCC 19-2 OPENS** breaker at cubicle **D4**, RPS MG SET 1B, 1-0500-MG1B.•	Positions the breaker to OPEN (OFF)	___	___	___
Evaluator note: Step 4 and all sub-steps occur at 125 VDC TURB BLD DIST PNL 1B-1					
4.a.	At **cubicle C02**:	Locates PNL 1B-1 cubicle C02	___	___	___
*4.a.(1)	•**Verify OPEN breaker 19**, AUTO BLOWDOWN CONTROL RESERVE FEED 2201-32. •	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
*4.a.(2)	•**Verify OPEN breaker 22**, OUTBRD MSIVs 901-41. •	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*4.a.(3)	•**Verify OPEN breaker 23**, Verify open breaker 23, HPCI LOGIC MAIN FEED PNL 901-39.•	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
*4.b	•At **Cubicle A02**, **verify open** RESERVE FD TO RX BLDG BUS 1. •	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
*4.c	•At **Cubicle B01**, **verify open** MAIN FEED FROM TURB BLDG BUS 2A.•	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
*4.d	•At **Cubicle A01**, **verify closed** RESERVE FD FROM TURB BLDG BUS 1A. •	Verifies that the breaker is CLOSED. IF it is not closed, candidate positions it to CLOSED (ON)	___	___	___
Evaluator note: Step 5 and all sub-steps occur at Turbine Building 125 VDC Main Bus 1A-2					
5.a	At **Cubicle A02**, #1A-2 NON-ESS BUS:	Locates Bus 1A-2 cubicle A02	___	___	___
*5.a.(1)	•**Verify open breaker 20**, RCIC LOGIC, 901-48.•	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
*5.a.(2)	•**Verify open breaker 15**, RCIC VLV CTRL & INDICATION, 901-4.•	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
Evaluator note: Step 6 and all sub-steps occur at Turbine Building 125 VDC Main Bus 1A					
*6.a	•**Verify open breaker B02**, MN FD TO 125 VDC REACT BLDG DIST PNL #1. •	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
*6.b	•**Verify closed cubicle B04**, RES FD TO TURB BLDG 125 VDC RES BUS #1B-1. •	Verifies that the breaker is CLOSED. IF it is not closed, candidate positions it to CLOSED (ON)	___	___	___
Evaluator note: Step 7 and all sub-steps occur at Turbine Building 125 VDC Main Bus 1A-1.					
7	At Turbine Building 125 VDC Main **Bus 1A-1 cubicle A01**, #1A-1 ESS BUS:	Locates Bus 1A-1 cubicle A01	___	___	___
*7.a	**Verify open breaker 11**, INBOARD MSIVs, 901-40.	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
*7.b	**Verify open breaker 6**, HPCI LOGIC RESERVE FEED PNL 901-39.	Verifies that the breaker is OPEN. IF it is not open, candidate positions it to OPEN (OFF)	___	___	___
8	Notify U1 US NSO1 10-Minute Actions are complete	Notifies U1 Supervisor (telephone or radio) that the 10-minute actions are complete.	___	___	___
CUE: The U1 Unit Supervisor has acknowledged completion of QCARP 0050-01 Attachment B 10-Minute actions.					

JPM Stop Time: _____

* Candidate must complete actions within 10 minutes

Operator's Name: _____
Job Title: ☒ RO ☒ SRO

JPM Title: Perform 10-Minute Operator Actions per QCARP 0050-01
JPM Number: In-Plant JPM i.

K/A Number and Importance:
K/A: 600000.AA2.16 **Rating:** 3.0/3.5

Suggested Testing Environment: Plant

Actual Testing Environment: ☐ Simulator ☐ Control Room ☒ In-Plant

Testing Method: ☒ Simulate Alternate Path**:** ☐ Yes ☒ No
☐ Perform SRO Only**:** ☐ Yes ☒ No

Time Critical: ☒ Yes ☐ No

Estimated Time to Complete: 10 minutes **Actual Time Used:** _____ minutes

References:
QCARP 0050-01, Rev. 10 Attachment B Block 1

EVALUATION SUMMARY:
Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The operator's performance was evaluated against the standards contained in this JPM, and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory

Comments: _____

INITIAL CONDITIONS

- You are the Unit 1 NSO.
- The Control Room has been evacuated due to a fire in the Control Room.
- QCOA 0010-12 (Fire/Explosion) is being executed.
- QCARP 0050-01 Immediate Operator Actions and Subsequent Operator Actions D.1 through D.6 have been completed.
- You have been issued a radio.
- **This JPM IS time critical.**

INITIATING CUE

Complete Block 1 of Attachment B of QCARP 0050-01.

Job Performance Measure

RO/SRO

Transfer Power from Reserve Power to MG Set

JPM: In-Plant JPM j.

Date: June 2007

INITIAL CONDITIONS

- Unit 2 is operating steady state at 30% power.
- The “B” RPS bus is on its reserve power supply.
- The control room has made preparations so that the RPS bus can be de-energized and transferred to the “B” RPS MG set (SRM shorting links are installed). No surveillances are in progress.
- All MSIV DC power indicating lights have been verified **ON** at panels 902-61, and 902-62.
- HCU Scram pilot solenoid fuses at panel 2202-22A are **NOT** blown.
- The circuit breaker for the main feed to the “B” MG set at MCC 19-29-2 is **CLOSED**.
- The 2-0595-107A and 2-0595-107B relays have been verified energized.
- Step C.3 has been completed and all currents are 50 ma DC.

INITIATING CUE

Transfer the Unit 2 “B” RPS bus to the “B” RPS MG.

Provide examinee with:

A copy of QOP 7000-01 with prerequisites signed off as completed (including the DC solenoid cable current data table).

Information For Evaluator’s Use:

UNSAT requires written comments on respective step.

***** Denotes CRITICAL steps.

The time clock starts when the candidate acknowledges the initiating cue.

JPM Start Time: _____

	PERFORMANCE	OBJECTIVE STANDARDS	SAT	UNSAT	N/A
EVALUATOR: The candidate may call the control room to inform them that the "B" RPS bus is about to be de-energized. If so, provide the necessary cues.					
*F.1.b. (1)	Close Motor Starter control switch.	Positions Motor Starter control switch to close.	[ ]	[ ]	[ ]
CUE: The motor starter control switch flag is red, the red indicating light is illuminated, and you hear the MG set starting up. **EVALUATOR NOTE:** Step F.1.b.(2) is not applicable.					
*F.1.b.(3)	Place VOLTAGE TRANSFER SWITCH in GEN position	VOLTAGE TRANSFER SWITCH placed in GEN position.	[ ]	[ ]	[ ]
*F.1.b.(4)	Wait 60 seconds after starting RPS MG Set.	Ensure wait period of 60 seconds.	[ ]	[ ]	[ ]
*F.1.b.(4)	Press Auxiliary Reset Button and hold until voltage builds up (approximately 10 seconds).	Presses Auxiliary Reset Button and holds until voltage builds up.	[ ]	[ ]	[ ]
CUE: IF the VOLTAGE TRANSFER SWITCH is placed in GEN, THEN indicate that voltage is 114 to 121 VAC.					
F.1.b.(5)(a)	Verify power to EPA 1(2) B-1.	Verifies EPA 1(2) B-1 "Power In" light lit.	[ ]	[ ]	[ ]
CUE: Point to "Power In" light and state: This light is lit.					
*F.1.b.(5)(b)	Close circuit breaker 1(2) B-1.	Positions 1(2) B-1 EPA breaker to close.	[ ]	[ ]	[ ]
CUE: Breaker is closed.					
F.1.b.(5)(c)	Verify POWER OUT indication lit.	Checks POWER OUT indication.	[ ]	[ ]	[ ]
CUE: Point to "Power Out" light and state: This light is lit.					
F.1.b.(6)(a)	Verify power to EPA 1(2) B-2.	Verifies EPA 1(2) B-2 EPA "Power In" light lit.	[ ]	[ ]	[ ]
CUE: Point to "Power In" light and state: This light is lit.					
*F.1.b.(6)(b)	Close circuit breaker 1(2) B-2.	Positions 1(2) B-2 EPA breaker to close.	[ ]	[ ]	[ ]
CUE: Breaker is closed.					
F.1.b.(6)(c)	Verify POWER OUT indicator lit.	Verifies POWER OUT indication lit.	[ ]	[ ]	[ ]

	PERFORMANCE	OBJECTIVE STANDARDS	SAT	UNSAT	N/A
CUE: Point to "Power Out" light and state: This light is lit. **EVALUATOR:** The candidate may elect to call the control room to inform that the "B" RPS bus is about to be de-energized, If so, provide the necessary cues. **EVALUATOR NOTE:** The key for the reserve feed breaker locking device cannot be removed when the device is in the unlocked position. Therefore simulate that the key is in the locking device.					
*F.1.b.(7)	Open reserve feed breaker.	At RPS "B" panel, opens reserve feed breaker.	[ ]	[ ]	[ ]
CUE: Breaker is open. **EVALUATOR NOTE:** Step F.1.b.(8) is not applicable.					
*F.1.b.(9)	Close normal feed breaker.	Positions normal feed breaker to normal position.	[ ]	[ ]	[ ]
CUE: Breaker is closed.					
F.1.b.(10)	Verify RPS generator and bus voltages are normal.	Verify RPS generator **and** bus voltage is 114 to 121 VAC (requires use of VOLTAGE TRANSFER SWITCH).	[ ]	[ ]	[ ]
CUE: Point to 118 VAC when meter is checked.					
*F.1.b.(11)	Lock the reserve feed breaker in the OFF position.	At RPS "B" panel locking the reserve feed breaker in the OFF position and removing the key.	[ ]	[ ]	[ ]
*F.1.b.(12)	Return key to Shift Manager's Key cabinet.	Returns key to cabinet.	[ ]	[ ]	[ ]
CUE: After the key is simulated returned to the SM key cabinet, inform the applicant that the JPM is complete.					

*CRITICAL STEP

JPM Stop Time:_____

Operator's Name: _____

Job Title: ☒ RO ☒ SRO

JPM Title: Transfer Power from Reserve Power to MG Set

JPM Number: In-Plant JPM j.

K/A Number and Importance:

K/A: 212000 A2.02 **Rating:** 3.7/3.9

Suggested Testing Environment: Plant

Actual Testing Environment: ☐ Simulator ☐ Control Room ☒ In-Plant

Testing Method: ☒ Simulate ☐ Perform Alternate Path**:** ☐ Yes ☒ No SRO Only**:** ☐ Yes ☒ No

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 15 minutes **Actual Time Used:** ____ minutes

References: QOP 7000-01 Rev. 31, Reactor Protection System MG Sets

INITIAL CONDITIONS

- Unit 2 is operating steady state at 30% power.
- The “B” RPS bus is on its reserve power supply.
- The control room has made preparations so that the RPS bus can be de-energized and transferred to the “B” RPS MG set (SRM shorting links are installed). No surveillances are in progress.
- All MSIV DC power indicating lights have been verified **ON** at panels 902-61, and 902-62.
- HCU Scram pilot solenoid fuses at panel 2202-22A are **NOT** blown.
- The circuit breaker for the main feed to the “B” MG set at MCC 19-29-2 is **CLOSED**.
- The 2-0595-107A and 2-0595-107B relays have been verified energized.
- Step C.3 has been completed and all currents are 50 ma DC.

INITIATING CUE

Transfer the Unit 2 “B” RPS bus to the “B” RPS MG.

Job Performance Measure

RO/SRO

Shift Unit 1 RBCCW Heat Exchangers

JPM Number: In-Plant JPM k.

Date: June 2007

INITIAL CONDITIONS

- 1A and 1B RBCCW Pumps are supplying RBCCW for Unit1.
- The 1B RBCCW Heat Exchanger is to be removed from service on Unit 1 for cleaning.
- ½ RBCCW Heat Exchanger is not required for Unit 2 operation.
- Desired RBCCW temperature is 80 degrees F.

INITIATING CUE

Place ½ RBCCW Heat Exchanger in service and remove the 1B RBCCW Heat Exchanger from service on Unit 1.

Provide Examinee With:
A copy of QCOP 3700-02.

Information For Evaluator's Use:

UNSAT requires written comments on respective step.

* * Denotes critical steps.
* • Denotes critical elements of a critical step.

Number any comments in the "Comment Number" column on the following pages. Then annotate that comment in the "Comments" section at the bottom of the page. The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

JPM Start Time: _

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.8.a	**Verify** 1/2 RBCCW Heat Exchanger is **NOT** required for Unit 2 operation.	Condition met by initial conditions.			
	Obtain 'S' key from WEC locked valve key cabinet.	Obtain 'S' key from WEC. Required only if valve must be manipulated.			
F.8.b.(1)	Verify 2-3799-84, ½ RBCCW HX U-2 SIDE RBCCW INLET VLV FROM UNIT 2 is locked closed.	Verifies that the inlet valve is locked closed.	___	___	___
CUE: If valve is not locked closed, indicate that the valve IS locked closed.					
F.8.b.(2)	Verify 2-3799-80, ½ RBCCW HX U-2 SIDE RBCCW OUTLET VLV TO UNIT 2 is locked closed.	Verifies that the outlet valve is locked closed.	___	___	___
CUE: If valve is not locked closed, indicate that the valve IS locked closed.					
*F.8.c.(1)	Open 1-3999-64 SERV WTR TO ½ RBCCW HX SV valve.	Opens 1-3999-64.	___	___	___
CUE: The stem moves out until hand-wheel stops moving.					
*F.8.c.(2)	Open 1-3999-68 SERV WTR TO TCV-1/2-3904 SV valve.	Opens 1-3999-68.	___	___	___
CUE: The stem moves out until handwheel stops moving.					
*F.8.c.(3)	Open 1-3999-67 SERV WTR FROM TCV-1/2-3904 SV valve.	Opens 1-3999-67.	___	___	___
CUE: If asked, venting is to be performed.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.8.d.a.(1)(a)	Open 1/2-3999-259, 1/2 RBCCW HX SERV WTR INLET INBD VENT VLV.	Throttle open 1/2-3999-259			
F.8.d.a.(1)(b)	Throttle open 1/2-3999-260, 1/2 RBCCW HX SERV WTR INLET OTBD VENT VLV.	Throttles open 1/2-3999-260			
CUE: A solid stream of water is observed thru sightglass.					
F.8.d.a.(2)(a)	Close 1/2-3999-259	Closes 1/2-3999-259			
CUE: Handwheel will no longer turn in the CW direction and if checked, no water flow is observed in the sightglass.					
F.8.d.a.(2)(b)	Close 1/2-3999-260	Closes 1/2-3999-260			
CUE: Handwheel will no longer turn in the CW direction and if checked, no water flow is observed in the sightglass.					
F.8.d.a.(3)(a)	Open 1/2-3999-263, 1/2 RBCCW HX SERV WTR OUTLET INBD VENT VLV.	Throttles Opens 1/2-3999-263.			
F.8.d.a.(3)(b)	Throttle open 1/2-3999-264, 1/2 RBCCW HX SERV WTR OUTLET OTBD VENT VLV.	Throttles open 1/2-3999-264			
CUE: A solid stream of water is observed thru sightglass.					
F.8.d.a.(4)(a)	Close 1/2-3999-263	Closes 1/2-3999-263			
CUE: Handwheel will no longer turn in the CW direction and if checked, no water flow is observed in the sightglass.					
F.8.d.a.(4)(b)	Close 1/2-3999-264	Closes 1/2-3999-264			
CUE: Handwheel will no longer turn in the CW direction and if checked, no water flow is observed in the sightglass.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
EVALUATOR NOTE Turning the setpoint adjuster (small silver knob) CCW, causes the needle to rotate CCW.					
F.8.e.	Flush Service Water through the ½ RBCCW Heat Exchanger.	Flushes Service Water through the ½ RBCCW Heat Exchanger for 10 minutes by adjusting the temperature controller setpoint knob CCW until the setpoint needle is set less than the indicated temperature and ensuring that TCV-1/2-3904 fully opens.	___	___	___
CUE: Simulate rotation of the setpoint needle based on rotation of the setpoint adjuster knob. When the applicant has simulated adjustment such that the setpoint needle is set less than the actual temperature, Indicate that the valve is full open. **Wait a moment or two then, indicate that 10 minutes has passed.**					
F.8.e.(1)	Close TCV ½-3904.	Closes TCV ½-3904 by placing the temperature controller setpoint at high end (full CW), full scale, setting.			
CUE: TCV indicates CLOSED.					
*F.8.f.(1)	Open 1-3799-84, ½ RBCCW HX U-1 SIDE RBCCW INLET VLV.	Opens Heat Exchanger inlet valve.			
CUE: The stem moves out until hand-wheel stops moving.					
*F.8.f.(2)	Open 1-3799-80, ½ RBCCW HX U-1 SIDE RBCCW OUTLET VLV.	Opens Heat Exchanger outlet valve.			
CUE: The stem moves out until hand-wheel stops moving.					
F.8.g	**IF** necessary, **THEN start** a second RBCCW Pump.	Condition met per initial conditions.			
CUE: Applicant may call Control Room to monitor Drywell Pressure and RBCCW parameters.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
F.8.h.(1)	**Slowly open** TCV-1/2-3904 while **slowly closing** TCV of RBCCW Heat Exchanger to be taken offline.	**Slowly opens** TCV-1/2-3904 while **slowly closing** TCV 2-3904B. (Temperature control valves manipulated such that outlet temperature is maintained relatively constant.)			
CUE: The goal is to maintain temperature relatively constant. Provide cues as necessary to indicate outlet temperature status. If oncoming valve is opened faster than off-going valve temperature will decrease and vice-versa.					
F.8.h.(2)	**Verify** TCV of RBCCW Heat Exchanger to be taken offline is fully closed **AND** TCV 1/2-3904 is controlling RBCCW temperature properly.	TCV 1-3904B is fully closed **AND** TCV 1/2-3904 is controlling RBCCW temperature properly.			
CAUTION: Applicant should Throttle OPEN ½-3904 prior to CLOSING 1-3904B. This ensures cooling to the RBCCW Hx's.					
CUE: ½-3904 is throttled OPEN. 1-3904B is CLOSED.					
F.8.h.(4)	**IF** 1B RBCCW Heat Exchanger is being removed from operation, **THEN close** 1-3799-75, 1B RBCCW HX RBCCW OUTLET VLV.	Closes 1-3799-75.			
CUE: The stem moves inward until hand-wheel stops moving.					
F.8.h.(5)	**Close** Service Water to TCV of RBCCW Heat Exchanger to be taken offline.	Closes 1-3999-75, SERV WTR TO TCV 1(2)-3904B SV			
CUE: The stem moves inward until hand-wheel stops moving.					
*F.8.i	Set temperature controller for TCV ½-3904 to maintain 80 degrees F.	Sets temperature controller to 80 degrees F.			
CUE: Indicate that the temperature controller is now set to 80 degrees F.					

STEP	ELEMENT	STANDARD	SAT	UNSAT	Comment Number
EVALUATOR: The candidate should inform you that the task is complete.					

JPM Stop Time: _____

Operator's Name: _____
Job Title: ☒ RO ☒ SRO

JPM Title: Start 1/2 RBCCW Pump and Heat Exchanger for Operation to Unit 1.
JPM Number: In-Plant JPM **k.**

K/A Number and Importance:
K/A: 400000 A1.02 **Rating:** 2.8/2.8

Suggested Testing Environment: Plant

Actual Testing Environment: ☐ Simulator ☐ Control Room ☒ In-Plant

Testing Method: ☒ Simulate ☐ Perform Alternate Path**:** ☐ Yes ☒ No SRO Only**:** ☐ Yes ☒ No

Time Critical: ☐ Yes ☒ No

Estimated Time to Complete: 45 minutes **Actual Time Used:** _____ minutes

References:
QCOP 3700-02, RBCCW System Startup and Operation

EVALUATION SUMMARY:
Were all the Critical Elements performed satisfactorily? ☐ Yes ☐ No

The operator's performance was evaluated against the standards contained in this JPM, and has been determined to be: ☐ Satisfactory ☐ Unsatisfactory

Comments: _____

INITIAL CONDITIONS

- 1A and 1B RBCCW Pumps are supplying RBCCW for Unit1.
- The 1B RBCCW Heat Exchanger is to be removed from service on Unit 1 for cleaning.
- ½ RBCCW Heat Exchanger is not required for Unit 2 operation.
- Desired RBCCW temperature is 80 degrees F.

INITIATING CUE

Place ½ RBCCW Heat Exchanger in service and remove the 1B RBCCW Heat Exchanger from service on Unit 1.