

APPENDIX A - TEMPLATE FOR DRILL SCENARIO

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Title:	
Drill Number:	Revision Number:
Drill Scope, Purpose, and Objective:	
Submitted By: _____	Date: _____
Reviewed By: _____	Date: _____
Reviewed By: _____	Date: _____
Approved By: _____	Date: _____

APPENDIX A - TEMPLATE FOR DRILL SCENARIO

Title:	
Drill Number:	Revision Number:
Initial Conditions: <i>Briefly describe facility status and system or equipment setup that is needed for the drill.</i>	
Pre-drill Notifications: Mark space as notifications are made. Yes <i>Identify group(s) to be notified</i>	
Precautions and Limitations: <i>State the affected system limits and precautions. Usually indicated in the system/facility operating procedures.</i>	
Operational limits: <i>List any limits imposed by the facility operating condition.</i>	
Technical Safety Requirements: <i>List any TSR limitations specified.</i>	
Drill Team Duties: <i>Describe the duties of the evaluators, safety monitors, observers, visitors, etc. Include where they should be stationed to observe personnel actions properly. Indicate when cues and props are to be used and answers to likely questions the facility operating personnel would normally ask. Be as specific as possible for each position, but especially for the evaluators and safety monitors.</i>	
Evaluator: <i>Any specific intervention points the evaluator is to perform should be placed here, with the name of the evaluator and the specific intervention point.</i>	
Safety Monitor: <i>Any specific intervention points the safety monitor is to perform should be placed here, with the name of the safety monitor and the specific intervention point.</i>	

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Title:			
Drill Number:		Revision Number:	
Drill Initiation: <i>Describe the method used to initiate the drill. If an announcement is to be made indicating drills are to commence, write out the announcement. The announcement should include the words, "This is a drill."</i>			
Expected Response/Evaluation Criteria: <i>Describe the response expected from all personnel. Give details for any special actions or activities if required. Describe the general sequence of events for the facility and the final conditions. If a specific order of response is required, ensure that the order of response is stated. If the drill scenario is to test reasoning or deductive powers, then give guidelines for the events that should occur (e.g., in checklist form) so that evaluators can accurately assess the abilities of the facility operating personnel.</i> <p style="text-align: center;"><i>Example Evaluation Criteria</i></p> <p style="text-align: center;"><i>(See Section 8 and Appendix D for More Details)</i></p>			
<i>IMPLEMENT appropriate operating procedures, abiding by cautions and limitation.</i>			
1	2	3	4
<i>Referred to incorrect procedure and failed to correct the error.</i>	<i>Problems and failures in referring to procedures in important instances.</i>	<i>Minor difficulties and oversights in referring to appropriate procedures.</i>	<i>Timely, accurate enactment of procedure.</i>
1	2	3	4
<i>IDENTIFY plant conditions requiring entry into abnormal procedures.</i>			
<i>Serious omissions, delays in recognizing events.</i>	<i>Some delays in recognizing off-normal conditions.</i>	<i>Minor delays in recognizing off-normal conditions.</i>	<i>Quick and accurate recognition.</i>

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Termination and Restoration:

Termination criteria are twofold:

The first criterion should describe the indications that the drill has reached completion. This may be the completion of a specific step in a procedure, the completion of a specific action such as replacing a fuse, or some other indication.

The second criterion should describe conditions indicating that the facility is not within prescribed limits, a facility limit or TSR limit has been exceeded, or other problem. Anyone recognizing an unsafe condition can and must call for the termination of the drill.

Restoration:

Describe the necessary actions to restore the facility to a desired condition for continued facility operation. This might include referencing a facility procedure or configuration document. May include a restoration checklist or listing in this section to ensure all restoration is complete. An example could be: HVAC #3 returned to service yes/no (circle one), ACC pump #1 running yes/no (circle one). Also, include restoration of the cues and props used in the drill. They are not to be left after the conclusion of the drill.

APPENDIX B - EXAMPLE DRILL SCENARIOS

The drill scenarios found in Appendix B have been compiled from the drill manuals listed in the Source Document section of this Handbook. The scenarios are in use or have been used at their respective facilities. The only exception to this is example scenario B 5-1 which was developed especially for this Handbook to compliment the guidelines of Appendix A.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Containment Argon Leak From R-36

Drill Number: 007-02

Revision Number: 0

Drill Scope, Purpose, and Objective:

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

Reviewed By: _____ Date: _____

Approved By: _____ Date: _____

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Containment Argon Leak From R-36

Drill Number: 007-02 Revision Number: 0

SECTION I. INITIAL CONDITIONS

PLANT MODE/DECAY HEAT: Any

SYSTEM/EQUIPMENT: 82, 25\CTMT H&V E68/69, R3/4

WATCHSTATIONS: ERT, RPT, CT, Control Room, SS

SPECIAL EQUIPMENT: R-36 on line

PRE-DRILL NOTIFICATIONS: IEM Cell Shift Supervisor

IEM CELL IMPACT: Inerted with R-36 on line.

SPECIAL CONDITIONS AND INSTRUCTIONS: None

SECTION II. PRECAUTIONS and LIMITATIONS

ABORT LIMITS: If containment pressure approaches + 1 psig.

OPERATIONAL LIMITS: None

TECH SPEC LIMITS OR PRECAUTIONS: IEM Cell 17.3.7.2.3

DRILL TEAM DUTIES: Monitor RPT, ERT and Control Room responses.

REFERENCES: Operation of IEM Cell Purification Unit, R-36, SN-82.1-11, H-4-11125, IEM Cell Argon Purification System. CTMT H&V, H-4-11502, 11547

SECTION III. DRILL INITIATION

The drill is initiated by a drill team member reporting as an RPT to the Control Room that a smear of 20,000 CPM (Beta, Gamma) was found in Cell 572 near R-36.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Containment Argon Leak From R-36

Drill Number: 007-02

Revision Number: 0

SECTION IV. EXPECTED RESPONSE/EVALUATION CRITERIA

Control Room has ERT and RPT assemble and all personnel are requested to stand clear, as it appears from the 550' level that the IEMC gallery H&V is supplied via E24. The ERT should verify the flow in the H&V duct prior to entering the lower IEMC gallery.

ERT and RPT set up barriers and begin surveys to find the source. Leak is found on a fitting going to the operating bed and R-36 is secured and isolated.

The drill monitor in the IEM Cell gallery shall observe if the ERT and RPT conduct the survey in an organized manner. The actual identification of the leak location is at the drill monitors' discretion.

SECTION V. TERMINATION and RESTORATION

Drill is terminated when R-36 is secured and isolated after the leak has been found, and CTMT H&V has been secured.

Restart R-36 per SN-82.1-11. Restart CTMT H&V.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Normal Control Area Heating and Ventilation Failure

Drill Number: 010-02 Revision Number: 0

Drill Scope, Purpose, and Objective:

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

Reviewed By: _____ Date: _____

Approved By: _____ Date: _____

APPENDIX B - EXAMPLE DRILL SCENARIOS

<p>Title: Normal Control Area Heating and Ventilation Failure</p> <p>Drill Number: 010-02 Revision Number: 0</p>
<p>Initial Conditions: Control Area H&V on line at time of initiation.</p> <p>Pre-drill Notifications: Mark appropriate space as notifications are made.</p> <p>None.</p>
<p>Precautions and Limitations: None.</p> <p>Operational limits: None.</p> <p>Technical Safety Requirements: Control Room Environment Inst. 17.3/4.3.4.5, 17.3.5.3</p>
<p>Drill Team Duties: The main concern of the Drill Coordinator should be that the response is handled logically using procedures and drawings.</p> <p>Evaluator: The drill evaluator in the control room evaluates control room procedure use, controlled drawing use, and problem solving actions. Field drill evaluator evaluates Shift Supervisor actions.</p> <p>Safety Monitor: Terminate if Control Room environment becomes uncomfortable, and have ventilation restored.</p>
<p>Drill Initiation: B20 Breaker 29 (supply to B20A) or S42-B20A is opened, resulting in a C-418 alarm due to the loss of E521, E522, E519M1 & M2, R519 and R52I.</p>
<p>Expected Response/Evaluation Criteria:</p> <p>The Control Room dispatches an operator to C-418 in response to the alarm. The SS watch reports the loss of Control Area H&V and that fault alarms won't clear. The CRA verifies C177B is not the cause.</p> <p>System knowledge and P&ID's should lead to checking B20A. SS finds the breaker in a tripped condition and attempts to reclose it with Control Room permission. The breaker will not reclose and actions are initiated to get the RSS to fix it.</p>

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Normal Control Area Heating and Ventilation Failure

Drill Number: 010-02

Revision Number: 0

Termination and Restoration:

Termination: 1) Normal completion. The drill may be terminated once the breaker has been determined to be faulty and actions are initiated to get the RSS to fix it.

2) Emergency Termination. If Control Room environment becomes uncomfortable; restore ventilation.

Restoration: The breaker should be reclosed and Control Area H&V restarted per SN-25.2-1.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Loss of Joy Pant Air Compressors

Drill Number: 2-005 Revision Number: 0

Drill Scope, Purpose, and Objective: Evaluate and prepare the Powerhouse operators and supervisors in the correct response to the loss of the Joy and Westinghouse Plant Air Compressors as per operator aids and operating procedures.

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

Reviewed By: _____ Date: _____

Approved By: _____ Date: _____

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Loss of Joy Plant Air Compressors

Drill Number: 2-005 Revision Number: 0

SECTION I. INITIAL CONDITIONS

SYSTEM/EQUIPMENT: Powerhouse air system, portable air compressor, air hose.

WATCH STATIONS: Powerhouse operators and supervisory personnel.

SPECIAL EQUIPMENT: None.

PRE-DRILL NOTIFICATIONS: None.

PLANT OPERATING CONDITIONS: Normal operation, one Joy Plant Air Compressor running and the other in standby. The portable air compressor positioned for use outside the powerhouse.

SECTION II. PRECAUTIONS and LIMITATIONS

ABORT LIMITS: Any emergent plant condition requiring immediate response.

OPERATIONAL LIMITS: Limit this drill to about 15 minutes. Do not let the instrument air pressure go lower than 70 PSI. This drill is not intended to interrupt stream to other facilities.

PRECAUTIONS: Caution should be taken when disconnecting flexible air lines, they may be charged with high pressure air.

DRILL TEAM DUTIES: Provide drill indications at the scene and observe the corrective actions taken by the operations personnel.

Indicate to the operators that the Joy air compressors will not successfully restart.

Evaluators to station themselves in order to observe the set up and valve alignment.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Loss of Joy Plant Air Compressors
Drill Number: 2-005 Revision Number: 0

SECTION III. DRILL INITIATION

Drill Coordinator indicates, with a cue, that the low air pressure annunciator has just alarmed.

OR

Drill Coordinator places the HAND/OFF/AUTO control switch for the compressors in the OFF position. This action is taken as the facility announcement is being made that drills are commencing.

SECTION IV. EXPECTED RESPONSE/EVALUATION CRITERIA

- 1) Boiler operator informs auxiliary operator that the low air pressure annunciator has alarmed.
- 2) Boiler operator notifies supervisory watch of the annunciator.
- 3) Auxiliary operator attempts to restart the Joy Air Compressor, checking briefly the breakers and disconnects (Evaluator simulates a failure to restart).
- 4) Auxiliary operator ensures that portable air compressor is configured to deliver compressed air to powerhouse.
- 5) Auxiliary operator starts portable air compressor and puts it in service.
- 6) Auxiliary operator makes appropriate notifications for repairs of Joy compressors.

SECTION V. TERMINATION and RESTORATION

The drill coordinator will terminate the drill when the objectives of the drill are met. The portable compressor is running and the plant air pressure is rising to the normal operating pressure for that compressor.

Place air system back in original configuration as required by operation needs.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Loss of Non-1E Invertor, D-115

Drill Number: 062-01 Revision Number: 0

Drill Scope, Purpose, and Objective: Determine ability of facility operating personnel to use trouble-shooting techniques to determine the cause of the breaker trip, and take appropriate action based on the determined cause.

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

Reviewed By: _____ Date: _____

Approved By: _____ Date: _____

APPENDIX B - EXAMPLE DRILL SCENARIOS

<p>Title: Loss of Non-1E Invertor, D-115</p>	
<p>Drill Number: 062-01</p>	<p>Revision Number: 0</p>
<p>Initial Conditions: MHTS temp less than 450 °F, D-114 must be operating, HTS-S sampling systems must be in a condition to allow an HTS CIS event, Reactor Cover Gas Pressure at 10+2" W.G., Loop #1 control must be operable (52040-1), CH A PAM's must be operable, and at least LLFM A or C must be operable.</p>	
<p>Pre-drill Notifications: Mark space as notifications are made. Yes</p>	
<p>Safeguards and Security IEM Cell</p>	
<p>Precautions and Limitations: No Mode 3 or 4 rod testing in progress. Forced cooling not required in the IEM Cell.</p>	
<p>Operational limits:</p>	<p>Reactor Modes 3 or 4</p>
<p>Technical Safety Requirements:</p>	<p>Control Room temperature < 100 °F; Reactor Cover Gas Pressure >-20 < 40" (Mode 3) or > 0 < 40" (Mode 4); at lease one LLFM (Mode 3) or two LLFM (Mode 4 fuel handling in vessel). 17.3.3.4.2 LLFM Operability, 17.3.5.3 Control Room Temperature, 17.3.2.6.c Reactor Cover Gas Pressure, 17.3.3.4.4 HTS Monitoring Instrumentation, 17.3.3.4.5 Control Room Instrumentation, 17.3.3.3 Post-Accident Monitors, 17.3.2.11 Pressure Transients.</p>
<p>Drill Team Duties: Ensure that actions and responses sufficiently control the casualty.</p>	
<p>Evaluator: Monitor procedural usage and trouble-shooting techniques.</p>	
<p>Safety Monitor:</p>	<p>Do not allow reactor cover gas pressure or IEM cell pressure to exceed Emergency Termination limits.</p>
<p>Drill Initiation: Drill Coordinator trips the D-115 AC output breaker and places a 3x5 card on it stating that the breaker is in a trip-free condition.</p>	

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Loss of Non-1E Invertor, D-115		
Drill Number:	062-01	Revision Number:	0
Expected Response/Evaluation Criteria:			
Control - announce and initially respond per appropriate alarm responses. These responses should be prioritized according to the indications and should result in: (1) stabilization of facility condition, (2) assessment of facility reveals no apparent cause for the trip, and the breaker remains closed following reclosure.			
Termination and Restoration:			
Termination: 1) Normal completion: Normal operation of D-115 is restored. 2) Emergency Termination: Control Room temperature approaching 90° F; Reactor Cover Gas > 15" and increasing or <5" and decreasing; or, IEM Cell pressure > 0" and increasing or < -8" and decreasing. Any HTS temperature outside a 400-440° F band.			
Restoration: D-115 is operating per facility procedures.			

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Remote retrieval of a 1000 Curie source from the Storage Canal using Auxiliary Retrieval Equipment (table-top discussion with walkthrough to follow or in-plant perform)

Drill Number: 01-001 Revision Number: 0

Drill Scope, Purpose, and Objective: Operator retrieves a 1000 Curie source from the Canal using Auxiliary Retrieval Equipment.

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

Reviewed By: _____ Date: _____

Approved By: _____ Date: _____

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Remote retrieval of a 1000 Curie source from the Storage Canal using Auxiliary Retrieval Equipment (table-top discussion with walkthrough to follow or in-plant perform)		
Drill Number:	01-001	Revision Number:	0
Initial Conditions:	The 75 pound encapsulated source is being moved within the storage canal using the primary crane. For in-plant drills the dummy source should be suspended from the primary crane.		
Pre-drill Notifications:	Mark space as notifications are made. Make notifications only for in-plant drill.		
Notify Safeguards and Security and Emergency Operating Center of the drill and not to respond. Notify Radiation Protection of the commencement of the drill and to supply personnel as requested.			
	Yes		
Safeguards and Security			
Emergency Operating Center			
Radiation Protection			
Precautions and Limitations:	The actual source is not to be used in the drill if run in-plant. The dummy source is the only source weight authorized to be used. The primary crane is manually moved out of the working area or the canal.		
Operational limits:	The weight of the source is to be verified within the operating limits or the auxiliary retrieval equipment prior to allowing movement of the source.		
Needed only for in-plant perform.	All equipment is to be operated within existing facility procedures.		
Technical Safety Requirements:	Limiting Condition for Operation 3.5.16 of 100 lbs. maximum to be lifted by the auxiliary retrieval equipment, to prevent damage to the auxiliary retrieval equipment which might result in a dropped source and subsequent release of radioactive material into the canal cooling system.		

APPENDIX B - EXAMPLE DRILL SCENARIOS

<p>Title: Remote retrieval of a 1000 Curie source from the Storage Canal using Auxiliary Retrieval Equipment (table-top discussion with walkthrough to follow or in-plant perform)</p>
<p>Drill Number: 01-001 Revision Number: 0</p>
<p>Drill Team Duties: Provide cues and props as required to make the drill effective.</p> <p>Evaluator: Listen to the description for the manual operation for removal of the primary crane from the operating area of the canal and the subsequent setup of the auxiliary retrieval equipment. Ensure that facility procedures are used for all operations and that all communications are such that the operation can be understood and personnel could act accordingly.</p> <p>Safety Monitor: For in-plant drills, verify that the dummy source is suspended from the primary crane. The dummy source can be verified by its black and orange color scheme. Combined with evaluator duties for discussion drill. Ensure that all operations would be performed by facility procedures with all attendant approvals. If operator would place facility personnel, the environment, or equipment in jeopardy, the safety monitor is to signal the end of the drill.</p>
<p>Drill Initiation: Describe the initial conditions to the operator, then have the crane operator inform the Control Room that the primary crane has malfunctioned and will not respond to either the main or backup controls.</p>

APPENDIX B - EXAMPLE DRILL SCENARIOS

<p>Title: Remote retrieval of a 1000 Curie source from the Storage Canal using Auxiliary Retrieval Equipment (table-top discussion with walkthrough to follow or in-plant perform)</p>			
<p>Drill Number: 01-001</p>		<p>Revision Number: 0</p>	
<p>Expected Response/Evaluation Criteria:</p> <ol style="list-style-type: none"> 1) The operator should inform the Control Room of the primary crane problem. 2) Operator describes the actions used in verifying primary crane is not functioning properly. 3) Notifications to be made by Control Room personnel. All necessary personnel would respond. 4) The auxiliary crane should be moved into position and hooked on to the source. The primary crane should then be detached from the source and moved out of the way and Danger Tagged Out-of-Commission. 5) The auxiliary crane should be used to complete the source move. 			
<p>Evaluation Criteria</p>			
<p>IMPLEMENT appropriate operating procedures, abiding by cautions and limitation.</p>			
<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>
<p>Referred to incorrect procedure and failed to correct the error.</p>	<p>Problems and failures in referring to procedures in important instances.</p>	<p>Minor difficulties and oversights in referring to appropriate procedures.</p>	<p>Timely, accurate enactment of procedure.</p>
<p>IDENTIFY plant conditions requiring entry into abnormal procedures.</p>			
<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>
<p>Serious omissions, delays in recognizing events.</p>	<p>Some delays in recognizing off-normal conditions.</p>	<p>Minor delays in recognizing off-normal conditions.</p>	<p>Quick and accurate recognition.</p>

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Remote retrieval of a 1000 Curie source from the Storage Canal using Auxiliary Retrieval Equipment (table-top discussion with walkthrough to follow or in-plant perform)		
Drill Number:	01-001	Revision Number:	0
Termination and Restoration:			
Termination:	1) Normal completion: The auxiliary crane has been used to complete the source move.		
	2) Emergency Termination: None.		
Restoration:	Store the auxiliary crane, restore operation of the primary crane. Needed only for in-plant drill. Store the dummy source.		

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Evaporator Feed Tank Header Line Leak

Drill Number: WEACDC04 Revision Number: 0

Drill Scope, Purpose, and Objective: Using appropriate facility procedures, identify and respond to a radioactive liquid leak emanating from a broken weld in the Evaporator Sump system.

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

Reviewed By: _____ Date: _____

Approved By: _____ Date: _____

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Evaporator Feed Tank Header Line Leak	
Drill Number:	WEACDC04	Revision Number: 0

DRILL TEAM GUIDELINES

Drill Ground Rules:

1. The drill scenario will not include any actions or situations that will degrade the condition of equipment, systems, and supplies.
2. The drill scenario will not include any actions or situations that will affect the detection and assessment of, and the response to, actual emergencies.
3. During the drill, no action shall be taken that compromise facility, area, site, or public safety.

Standard Drill Conditions:

1. The facility will be accessible, and the area required for drill performance will be in an operationally safe condition.
2. All required references will be available for performance of the drill.
3. Unless otherwise noted, initiating cues and terminating cues are at the direction of the Drill Coordinator.

Actions to be Simulated:

Most drill activities are performed as if an incident were actually occurring. The following actions will be SIMULATED, if and when these actions are indicated in response to the simulated scenario events.

- None.

The evaluator may direct participants to simulate additional activities to avoid performing actions that may cause adverse or undesired effects.

Responsibilities:

The Drill Coordinator shall perform the following actions:

1. Review the drill, ensuring that the requirements and standards reflect the most recent revisions to referenced procedures and modifications to facility equipment.
2. Ensure areas in which the drill will be conducted are accessible.
3. Conduct the pre-drill briefing with drill team members.
4. Ensure drill team members are familiar with respective assignments and responsibilities.
5. When all drill team stations are manned, initiate the drill.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Evaporator Feed Tank Header Line Leak

Drill Number: WEACDC04 Revision Number: 0

6. Ensure each drill team member notes, on a drill chronology log, all actions or events observed during the course of the drill, to include pertinent comments.
7. Upon termination of drill, return all facility equipment and systems to the required pre-drill state.
8. Discuss crew performance with drill team members.
9. Coordinate a formal drill critique with the drill participants.
10. Complete a drill summary and route to all required personnel.

DRILL TEAM PREPARATION

Estimated Drill Duration:

- 2 hours

Drill Team Aids:

Props and equipment required:

- Process water hose placed over piping and running to simulate leak rate and a blue ribbon to indicate leak location.

Pre-drill Notifications:

The Drill Coordinator is responsible for making the following notifications prior to initiating drill:

NOTE: Unannounced drill do not require notifications, but courtesy notifications are suggested.
Unannounced drills require no pre-drill announcement.

1. Request ETF Control Room (X-XXXX) make the following pre-drill announcement:

"The Effluent Treatment Facility will be conducting facility drills. Please keep non-essential radio traffic to a minimum."

2. Inform Radiological Controls (X-XXXX) of scheduled drill activities.

Pre-drill Briefing (Conducted by Drill Coordinator):

Activities of Drill Coordinator:

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Evaporator Feed Tank Header Line Leak

Drill Number: WEACDC04 Revision Number: 0

1. Issue all drill team members a copy of applicable portions of the scenario package, a drill chronology log, and any required cue cards or sheets.
2. Provide instructions to drill team members:
 - Direct any difficulties encountered to the Drill Coordinator.
 - Any significant violation of a SAFETY RULE or SECURITY RULE may terminate the drill.
3. Make drill team assignments, instructing drill team members of their specific responsibilities during the drill.
4. Review scenario summary and expected sequence of events.
5. Ensure all drill team members either possess or are issued proper identification (colored hats).
6. Initial facility conditions: None.
7. Technical Safety Requirement/Operational Safety Requirement Considerations: None.
8. Systems affected: Equipment Drains and Evaporator Sumps.
9. Methods of communications: Two-way radio.
10. Drill safety concerns: None.
11. Drill abort limits: None.
12. Identify/select affected equipment or scenario options>
 - A. Contamination levels of 200 CPM at source > background.
 - B. Contamination levels of 2000 CPM at source > background.
 - C. Contaminated operator. (To be used only if operator is potentially contaminated during the drill)
13. Termination point:
 - Source of spill isolated/stopped, contaminated personnel evacuated, spill area isolated and surveyed, leakage contained.
14. Obtain facility permission to conduct drill.

Instructions to Drill Participants:

1. The Shift Supervisor or Shift Manager may terminate or suspend the drill for just cause at any time.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Evaporator Feed Tank Header Line Leak	
Drill Number:	WEACDC04	Revision Number: 0

2. Use required drill communications, that is, "THIS IS A DRILL," before and after each drill-related communication over radios or public address systems.
3. Assume the following initial facility conditions: ("•" indicates a required initial condition for this scenario, "*" indicates a distraction to be used at the discretion of the drill coordinator). Note: For distractor selected, provide crew with appropriate procedure,
 - * Rainfall has been very heavy for the past 24 hours
 - * Truck filling Caustic Storage Tank.
 - * GA-6 monitor testing in progress.
 - * Truck filling Acid Storage Tank.
 - * Chemical cleaning of filters in progress.
 - * Unloading DWPF Tanker.
 - All other conditions are "as is."
4. Respond to drill conditions **AS IF THEY ARE REAL.**

DRILL EVENT GUIDE

<u>CONDITION</u>	<u>RESPONSE/EVALUATION CRITERIA</u>
* Denotes critical action step	
<u>Initiating CUE:</u> Drill Controller calls Control Room to report water leaking from piping between Feed Tank and Treatment Building.	Operator(s) at the scene:
Between Feed Tank and building	Reported spill to control room, including the following:
Contaminated Sump discharge	* Location of leak/spill.
<u>CUE:</u> Failed weld at elbow	* Type of spill.
<u>CUE:</u> As is	Source/cause of leak/spill.
<u>CUE:</u> Only if self-contaminated	Wind speed and direction.
	Contaminated personnel.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Evaporator Feed Tank Header Line Leak	
Drill Number:	WEACDC04	Revision Number: 0

NOTE: Source can be stopped by completing either of;

A: Stop all flow into header: Cleaning solutions, Evaporator Sump Pumps, Dike Sump Pumps.

Recommendations to stop spill.

* Spill was stopped at the source.

CONDITION

RESPONSE/EVALUATION CRITERIA

B: Re-route Header to WWCT.

Reported immediately when spill has stopped.
Appropriate protective equipment was donned.
Warned other personnel away from spill area.
Barricaded and/or roped off area as needed.

Control Room Operations

Reported spill to Supervision and SRSOC, including the following:

Between Feed Tank and building

* Location of leak/spill

Contaminated Sump discharge

* Type of spill.

CUE: Failed weld at elbow

Source/cause of leak/spill.

Size and estimated amount of spill.

CUE: As is

Wind speed and direction.

CUE: Only if self-contaminated

Personnel contamination.

* Notified RCO and Industrial Hygiene.

Immediately reported when spill was stopped.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Evaporator Feed Tank Header Line Leak	
Drill Number:	WEACDC04	Revision Number: 0

* Recorded time in the appropriate section of 241-FH-9562.

Supervisor/Manager

Notified SRSOC immediately.

* Classified event IAW Procedure Manual 9B5.

CONDITION

RESPONSE/EVALUATION CRITERIA

Advised Waste Management line organization and WMEC of spill ASAP.

Supervisor/Manager personally inspected spill area to review immediate actions taken and recommend additional actions.

Assessed effectiveness of immediate actions to stop and contain spill, then request additional assistance as needed.

Radiological Controls

CUE: Personnel contamination will only occur if operators potentially contaminate themselves. Personnel contamination levels vary by scenario option (A/B):
For option A: 150 CPM > bkgd
For option B: 1500 CPM > bkgd

Evacuated any (potentially) contaminated personnel

Established personnel protection requirements at the scene.

CUE: No airborne contamination

Obtained air sample in the spill area.

CUE: 200 CPM > bkgd (option A), 2000 CPM > bkgd (option B), No alpha contamination (either option)

Surveyed area to assess hazards and define spill area.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Evaporator Feed Tank Header Line Leak

Drill Number: WEACDC04 Revision Number: 0

Established entry requirements for spill area.

Contaminated materials were disposed of
IAW 5Q Manual

POST-DRILL ACTIVITIES

FACILITY RESTORATION

Restore all facility equipment and systems to their required pre-drill state and perform an independent verification to ensure completion.

- Return process water hose to original location, if used.
- Return Evaporator Sump Pumps to "Auto," if applicable.

POST-DRILL NOTIFICATIONS

The Drill Coordinator is responsible for notifying the following that the ETF drill is complete:

- ETF control room (X-XXXX), request the following post-drill announcement: "The Effluent Treatment Facility has completed facility drills."

POST-DRILL DISCUSSION

Discuss with the crew, short and long range impact on facility conditions resulting from the given scenario.

- Alternate ways of pumping sumps until repairs are completed.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Fire in Diesel Generator Area

Drill Number: 30.94.04.3 Revision Number: 0

Drill Scope, Purpose, and Objective: Provide shift team training in casualty response and to permit evaluation of their performance when responding to a fire in the diesel generator area.

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____

Reviewed By: _____ Date: _____

Approved By: _____ Date: _____

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Fire in Diesel Generator Area

Drill Number: 30.94.04.3

Revision Number: 0

Initial Conditions:

This drill will be performed in the ATR concurrently with operating crew plant familiarization (fast cruise) and Experiment Loop Chemistry Conditioning. This drill is not intended to interfere with the routine operations of the TRA. The reactor will simulate being shutdown during this drill. The M-42 or M-43 diesel generator is supplying the normal diesel loads. The diesel generator may be shutdown during this drill with the emergency diesel M-6 in auto for picking up the load. General maintenance was completed on the standby diesel generator and the diesel generator area has not been cleaned up.

Pre-drill Notifications: Mark Yes space as notifications are made.

A warning call will be placed to the INEL Fire Department prior to the drill and it is planned that the Fire Department will not actually respond to TRA. Protection Technology Idaho (PTI) will be informed of the drill and will not respond to the drill activities. The Warning Communications Center (WCC) will be informed of the drill activities and will be expected to participate in the drill activities (notifications). The TRA Duty Officer will be informed of the drill activities and will be expected to participate in the drill activities (notifications). Life Safety Systems (LSS) will be informed of the drill activities and will be expected to participate in the drill activities.

Yes

Fire Department
Protection Technology Idaho
Emergency Operating Center
Life Safety Systems

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Fire in Diesel Generator Area		
Drill Number:	30.94.04.3	Revision Number:	0
Precautions and Limitations: The diesel generator area fire system must remain operational			
All plant heating and ventilation systems must remain as intended by the plant operating crew, except affected areas.			
Loop conditioning should not be interrupted by this activity.			
Operational limits:	None.		
Technical Safety Requirements:	None.		

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Fire in Diesel Generator Area

Drill Number: 30.94.04.3

Revision Number: 0

Drill Team Duties: Provide cues and props as required to make the drill effective which are:

- a) Fire - Team Member waving a red blanket, red flag, or red flashing light.
- b) Light Smoke - Team Member waving a grey blanket, grey flag, or grey plastic bag.
- c) Fire Out/Smoke Clear - Team Member waving a white blanket, white flag, or white plastic bag.
- d) Breaker Open/Closed/Tripped - Magnetic laminated sign indicating breaker status.
- e) Valve Open/Closed/Throttled - Laminated tag indicating valve position.
- f) Ruptured Pipe - Crumpled aluminum foil wrapped around pipe.

Evaluator: During the drill one evaluator will remain in the Reactor Control Room to assist the on duty Shift Manager in differentiating between what is and is not drill activities. Ensure all drill messages start and end with the words "This is a drill, This is a drill".

Be alert to slipping/tripping hazards in and around the diesel generators.

Do not allow any energized electrical panels to be opened.

Safety Monitor: If the fire pull box is activated in the diesel generator area remain in the diesel generator area as a fire watch until the drill is terminated and Life Safety Systems personnel have returned the fire system to an operable condition. If a fire starts in the diesel generator area during the drill the designated fire watch will call the Fire Department at 3-777 to report the fire.

If the diesel that is on fire is shutdown as part of this drill, do not allow use of the remote diesel shutdown switch to shutdown the diesel unless authorized by the drill coordinator. If the remote shutdown switch is used it will shutdown both diesels if running.

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title: Fire in Diesel Generator Area	
Drill Number: 30.94.04.3	Revision Number: 0
<p>Drill Initiation: The drill will be initiated by the Reactor Auxiliary Operator observing smoke in the diesel generator area. The fire will be from a pile of oily rags piled up on the floor near the east end of M-43 or west end of M-42 diesel (either diesel can be used for this drill). M-42 is the running diesel. The standby diesel generator has just finished having some general maintenance performed on it, this is the source of the oily rags. The diesel generator area is full of light smoke but not to the point of a person having to crawl to avoid smoke or donning Self Contained Breathing Apparatus (SCBA).</p>	
Expected Response/Evaluation Criteria:	Circle Yes or No
1) The fire is identified by the Reactor Auxiliary Operator (RAO).	Yes No
2) The RAO summons the Fire Department and informs the Shift Manager of the situation.	Yes No
3) The RAO remotely trips the diesel.	Yes No
4) The Shift Manager (SM) directs the reactor be shutdown if not already shutdown.	Yes No
5) Procedure E-0 out and used.	Yes No
6) Emergency Brigade responds to the fire in the diesel generator area.	Yes No
7) SM classifies the event and makes notifications.	Yes No

APPENDIX B - EXAMPLE DRILL SCENARIOS

Title:	Fire in Diesel Generator Area		
Drill Number:	30.94.04.3	Revision Number:	0
Termination and Restoration:			
Termination:			
1) Normal completion:			
a) The drill will be terminated when all of the following items are accomplished.			
b) The Emergency Brigade has responded to the fire emergency.			
c) The reactor has been shutdown (as applicable).			
d) The Shift Manager has informed appropriate management personnel, the Fire Department and WCC.			
e) The above actions and/or procedures have been completed to the extent required by the Drill Coordinator.			
2) Emergency Termination: The drill will be aborted when any person makes a mistake in magnitude and/or frequency that, in the opinion of the Drill Team, the drill would challenge a Technical Specification.			
Restoration: LSS will be required to reset the fire systems after the drill is completed. Restore either M-42 or M-43 as the operating diesel. Store or dispose of all props used during the drill.			

APPENDIX C - EXAMPLE DRILL CUES AND PROPS

APPENDIX C - EXAMPLE DRILL CUES AND PROPS

The following examples of drill cues and props are a combination of several groupings being used by DOE facilities. This list is not a requirement, nor is it meant to be all inclusive or used as the only grouping of drill cues and props. This is only an example; yours should conform to any requirements of your facility and fit the drill scenario.

CONDITION	CUES AND PROP USED TO SIMULATE CONDITION
FIRE	Waving a red cloth, flag, plastic bag, or red flashing light
LIGHT SMOKE	Waving a grey cloth, flag, plastic bag, or a smoke generator
HEAVY SMOKE	Waving a black cloth, flag, plastic bag, or a smoke generator
FIRE OUT SMOKE CLEAR	Waving a white cloth, flag, or plastic bag
CAUSTIC SPILL	Orange cloth, flag, or bag on floor
ACID SPILL	Purple cloth, flag, or bag on floor
OIL SPILL	Brown cloth, flag, or bag on floor/ground
CONTAMINATED SPILL	Actual water on the floor or blue cloth, flag, or bag on floor
BREAKER - CLOSED/ OPEN/TRIPPED	Laminated sign indicating breaker status Letters should be large enough to read at 4-6 feet
VALVE - OPEN/ CLOSED/THROTTLED	Laminated sign indicating valve position Letters should be large enough to read at 4-6 feet
RUPTURED PIPE	Crumpled aluminum foil wrapped or taped to a pipe
ALARM	Electronic buzzer
ALARM LIGHT	"Yellow sticky" (or something similar) or laminated sign on alarm light
INJURED/ CONTAMINATED PERSON	Either a "dummy" or live "actor" simulates injury using moulage and makeup or taped on signs
ANALOG INDICATION	Clear plastic stick-on gauge faces with needle indicators (allows actual indications to still be monitored) Small signs with needle pointing to a number hanging on or near meter face
EXPLOSION	"Boom" sign or confetti
DARK, DUE TO SMOKE OR LIGHTS OUT	Darkened face mask or glasses, or the main lights are out with only emergency lighting on. Use caution as personnel injury could occur. Use extra safety monitors to ensure that facility operating personnel do not injure themselves.

APPENDIX D - EVALUATION CRITERIA

APPENDIX D - EVALUATION CRITERIA

Evaluation Table

Watchstation _____		Watchstander _____				
Activity Evaluated	Activity Observed (yes/no)		Rating of Activity * (Check one that applies)			Comments
	Y	N	E	S	U	
<u>Component and System Interrelationship</u> a. System and Component b. System Interrelations c. Application of Fundamentals						
<u>Reasoning and Judgement</u> a. Properly identified problem b. Anticipation of plant changes						
<u>Team Interaction</u>						
<u>Communications</u>						
<u>Procedure Use</u>						
Evaluator: _____ Date: _____ Time: _____ * E=Excellent S=Satisfactory NI=Needs Improvement U=Unsatisfactory						

APPENDIX D - EVALUATION CRITERIA

Description of Evaluation Table Criteria

Evaluation Criteria	Excellent	Satisfactory	Unsatisfactory
Component and System Interrelationship	Understands advanced principles and their applications to plant and equipment operation. Detailed knowledge of system interrelations.	Understands basic principles and their application to plant and equipment operation. Adequate knowledge of system interrelations.	Inadequate knowledge of systems. Does not understand basic principles of equipment operation. Does not know system interrelations.
Reasoning and Judgement	Anticipates abnormal plant or component conditions and corrects the conditions without relying on automatic protective functions.	Recognizes abnormal plant or component conditions. Actions taken will place the plant or component in a safe condition.	Does not recognize abnormal plant or component trends. Actions may place the plant or component in an unsafe condition. Relys exclusively on automatic functions.
Team Interaction	Leads in problem identification and solving. Leads crew actions, aware of others' actions.	Participates in problem identification and solving. Coordinates actions with other crew actions, and usually aware of others' actions.	Inappropriately drives or fails to participate in problem identification and solving. Fails to coordinate with other crew actions, and is seldom aware of others' actions.
Communications	Clear, concise, and understandable. Consistently uses proper protocols and formats.	Clear and understandable, few errors. Normally uses proper protocols and formats.	Has difficulty conveying the message. Does not use proper protocols and formats.
Procedure Use	Understands and uses procedures. Knows the reasons behind the procedures.	Understands and uses procedures.	Does not understand the procedures. Does not use procedures to accomplish tasks.

