1. PURPOSE

All Department of Energy (DOE) sites are required to conduct an annual full participation exercise to test and demonstrate an integrated emergency response capability according to the requirements and guidance provided in DOE Order 151.1 and supporting Emergency Management Guides. In order to comply with these requirements, the Rocky Flats Environmental Technology Site (RFETS) will conduct a radiological exercise entitled READY – 2000, on June 21, 2000. The exercise will also provide for the joint participation of State and local government agencies to a limited extent, as well as selected offsite emergency response organizations.

READY-2000 was designed primarily to demonstrate and test the capability of the Site to effectively respond and mitigate an operational emergency, requiring liaison and coordination with state and local emergency response authorities and agencies, and the support of offsite emergency response organizations and hospitals. To satisfy these requirements and objectives, the scenario developed for *READY-2000* will involve:

- A credible radiological emergency event in or near a nuclear facility resulting in a release to the environment and the contamination of a wide area of the Site.
- The injury and/or contamination of workers and first responders inside the facility.
- The potential for offsite impacts.

The scenario event was designed and developed with the assistance and input of onsite and offsite subject matter experts from all participant organizations and agencies, including the nuclear facility designated as the location for the postulated emergency event.

2. SCOPE

READY – 2000 is designed to demonstrate and test the capability of the RFETS to protect the health and safety of workers and the public, and to protect property and the environment. The exercise will focus on the ability of the Site to effectively respond, control, mitigate, and limit the consequences of a multi-event radiological emergency at a facility located within the security boundaries of the RFETS Protected Area. Other events and conditions of the scenario will allow for participation of state and local agencies and emergency response organizations.

The exercise scenario and objectives have been designed to emphasize the Site's emergency response capabilities, to include:

- notification and mobilization of the entire Site ERO;
- command, control and communications;
- assessment and classification of the emergency event;
- emergency public information;
- triage and treatment of injured and/or contaminated personnel;
- evacuation and accountability of personnel;
- coordination and support requirements to State and local authorities and agencies; and
- recovery planning and reentry strategies.

The participation of the State of Colorado and other offsite authorities and agencies will be limited. The exercise scenario event(s) will initially result in the declaration of a Site Area operational emergency, requiring the determination of sitewide protective actions (PAs) and offsite protective action recommendations (PARs).

The decisions and actions executed in response to the exercise scenario will allow for a comprehensive evaluation of the current RFETS emergency response capability. The evaluation will be based upon the ability to demonstrate the appropriate responses in accordance with standardized emergency plans and implementing procedures.

2. SCOPE (continued)

The State Emergency Operations Center (SEOC) will be activated. Exercise participation by State agencies, with the exception of Colorado Department of Public Health and Environment (CDPHE), will be limited to a communications drill that will be used to train available key personnel and validate the personnel recall lists. The participation by the Office of Emergency Management will consist of providing an operations officer and a limited number of associated Joint Information Center (JIC) support personnel. Offsite participation in *READY – 2000* includes local ambulance, fire protection, and health care service providers.

Critiques will be conducted for all participants and the exercise Controller/Evaluator organization for the purpose of documenting performance results and potential program enhancements. This will allow for the immediate identification and discussion of the strengths, weaknesses, and deficiencies observed during the course of the exercise.

3. EXERCISE OBJECTIVES

A terminal objective and ten supporting enabling objectives will facilitate the conduct and evaluation of *READY – 2000*. These are measurable and attainable performance objectives designed to demonstrate and test specific emergency response procedures, functions, or capabilities. They will also serve as the basis for the development of the initiating event scenario, as well as the criteria for the evaluation of the exercise.

Terminal Objective

Demonstrate the capability to protect the health and safety of workers, the public and the environment.

Enabling Objectives

1. Given initial discovery of emergency events/conditions, recognize the consequences and initiate emergency response actions.

Scope of Play. A facility-specific initiating event of sufficient scope and detail to allow for the evaluation of integrated facility-level actions and sitewide emergency response. The location, magnitude, and potential consequences of the initiating event and collateral conditions will necessitate a request for mutual aid from offsite emergency response organizations.

2. Given emergency events/conditions, make protective action decisions.

Scope of Play. Sufficient to provide for the evaluation of the initial decision-making process by the facility management team, and validate the initial protective actions directed by the Shift Superintendent. All verifications of protective actions by the Crisis Manager and Hazards Assessment Center will also be evaluated.

3. EXERCISE OBJECTIVES (continued)

3. Given declaration of an operational emergency, make notifications.

Scope of Play. Provide for the evaluation of verbal and written notifications of state, local and DOE HQ authorities or agencies. Full sitewide Emergency Response Organization recall will also be required.

4. Given declaration of an operational emergency, establish command, control, and communications.

Scope of Play. Sufficient to evaluate the establishment of access control on scene and at the EOC and integration of mutual aid agencies into the incident command organization.

5. Given declaration of an operational emergency, establish offsite liaison.

Scope of Play. Sufficient to activate the Offsite Coordination Center (OCC), Joint Information Center (JIC), and selected offsite mutual aid agencies in the required emergency response actions based on the consequences of the postulated scenario.

6. Given the release of hazardous materials, monitor and control emergency worker exposure.

Scope of Play. Sufficient to evaluate the ability of the Incident Command Organization to implement As Low As Reasonably Achievable (ALARA) at the scene for first responders and follow-on emergency responders, and the ability of the Emergency Management Organization to monitor the radiation exposures of emergency workers. The need to make an emergency reentry into the affected facility will be developed to facilitate the evaluation of the decision-making process.

3. EXERCISE OBJECTIVES (continued)

7. Given multiple casualties, provide emergency medical treatment.

Scope of Play. Provide for the evaluation of the following: (1) use of the occupational medicine decontamination facility, as well as the support provided by Radiological Protection and Industrial Hygiene; (2) RCT support to offsite hospitals, and the interface between the incident command, occupational medicine and the receiving hospitals; (3) Emergency Medical Technician (EMT) treatment of contaminated victims; and (4) next of kin notifications by the Human Resources Functional Work Center.

8. Given declaration of an operational emergency, keep the site populace and public informed of emergency response actions.

Scope of Play. Sufficient to evaluate the ability of the Shift Superintendent, Public Information Manager, and Emergency Public Information Team to make timely and accurate sitewide announcements concerning the emergency response and required employee response. The ability of the Public Information Manager and Emergency Public Information Team to make timely and accurate media releases concerning the emergency response.

9. Given emergency events/conditions, perform consequence assessments.

Scope of Play. Provide scripted and credible hazardous material release models to facilitate the assimilation of initial and follow-on field data for the performance of consequence assessments. The Regional Atmospheric Response Center and Hazards Assessment Center (HAC) liaison will be evaluated for its role in developing consequence assessment. The uses of EALs, EARMs, ALOHA, CAMEO and other assessment tools by the Hazards Assessment Center will also be evaluated.

3. EXERCISE OBJECTIVES (continued)

10. Given emergency events/conditions, demonstrate recovery.

Scope of Play. The performance of the Recovery Manager and team will be evaluated. Planning for recovery will include development of a recovery planning strategy, and approval of the Crisis Manager to proceed.

4. SCENARIO NARRATIVE SUMMARY

Setting the Stage

The scenario developed for the exercise emergency event involves a fire in the Drum Storage Area of Building 374, that affects 10 TRU waste drums containing mixed wastes, one TRU waste crate, and 2 wooden low-level waste crates which are the source for the propagation of the fire. The event will result in a radiological release to the environment, and the injury and/or contamination of five employees.

On June 21, 2000, at 7:30 a.m., two building maintenance workers are performing welding operations in Room # 3813, located at ground elevation on the East-end of Building 374. Three other building employees are located nearby. Actual weather conditions are used for the exercise. Alterations were made to the Fire Suppression Sprinkler System in the days just prior to the fire and a valve line-up was incorrectly performed following the alterations, thus the sprinkler system is inoperable.

The Event

An electrical short-circuit occurs in the portable welding machine being used. The short-circuit results in the near fatal electrocution of Worker # 1 and a fire that quickly ignites plywood shipping crates located nearby. Concurrent with the spread of the fire, the Fire Suppression Sprinkler System fails to operate and the fire spreads to other flammable materials stored in the vicinity of Room # 3813. Additionally, the heat from the burning plywood crates and their contents causes excessive heating of the waste drums in the area and their tops to blow off resulting in release of radioactive materials to the room. A roll-up door at the loading dock to Room # 3813 provides the main release pathway for radioactive materials to the environment.

4. SCENARIO NARRATIVE SUMMARY (continued)

The Casualties

The electrocuted worker (Worker #1) is unconscious, has severe second and third degree burns, cardiac difficulty and problems breathing. Worker #2 receives a less severe electrical shock while attempting to assist Worker # 1.

Workers nearby are injured by a variety of mechanisms in the ensuing panic and response to the fire. Worker # 3 slips and injures her head while attempting to evacuate after notifying the Fire Department and building management. Worker #4 suffers an open fracture of the left arm while attempting to aid the welders. Worker #5 receives a burn injury to his face and upper breathing passages while dragging Workers #1 and #2 away from the fire. In addition, the workers are unaware that they also have radiological contamination.

Initiating Exercise Play

Worker #3 passing by Room #3813 sees the fire and reports the event using a radio. Worker #3 also calls the Building 371/374 Configuration Control Authority (CCA), to report the emergency. (The room in which the fire is occurring does not have a fire alarm, and the flow alarm will have been simulated disabled by work activities.) Worker #3 then attempts to escape, slips, injures her head and is temporarily rendered unconscious. She becomes the missing employee during the accountability process.

Anticipated Response

The Building 371/374 CCA implements the Building Emergency response Operations (BERO) procedure, directing a controlled evacuation of the building, initiating personnel accountability, and establishing initial Incident Command. The CCA also contacts the Shift Superintendent to provide as much information as possible concerning the event and location.

4. SCENARIO NARRATIVE SUMMARY (continued)

The RFETS Fire Department responds to the emergency call and begins the size-up and setup for fire-fighting operations. (The fire is projected to burn for 25 to 30 minutes until the flammable materials in the plywood crates are depleted.) Entry by firefighters is conducted to recover the injured and fight the fire. RCTs provide support concerning contamination issues for victims, the immediate area around Building 374, and emergency reentry teams. The injured workers are transported to offsite medical facilities.

The Shift Superintendent declares a Site Area Emergency based on the Emergency Action Levels for Building 374 contained in the Emergency Classification and Protective Actions procedure. The Shift Superintendent assumes the role of Crisis Manager and directs the Fire Dispatcher to complete an Emergency Offsite Notification Form, initiate offsite notifications, and activate the DERS pager system. The Shift Superintendent also completes an Emergency Onsite Notification Form and faxes it to the CAS for dissemination over the Site LS/DW System. Protective actions implemented include the upwind evacuation of personnel in the Building 371/374 Complex, evacuation of all personnel within 100 meters of the building, sheltering onsite, and the isolation of ventilation systems of onsite sheltered facilities. The protective action recommendation provided to the offsite agencies would be to take no action.

Personnel from Building 371/374 evacuate to the assembly area. During the accountability process five accountability tags have not been claimed by their owners.

The EOC and supporting FWCs are activated. The Crisis Manager (CM) formally assumes responsibility for the emergency and the Shift Superintendent continues as Incident Command for the tactical response. RFETS emergency response personnel take actions as called for by the RFETS Emergency Plan and supporting procedures.

4. SCENARIO NARRATIVE SUMMARY (continued)

The five "unaccounted for" employees (Injured Workers #1 through #5) from Building 371/374 are later determined to be the injured workers affected by the consequences of the emergency event, who are rescued and transported for treatment at OMD or local area hospital. Four of the injured workers (#1, #2, #4, and #5) are rescued during Initial Entry operations conducted by the fire department. The Incident Commander initiates the planning for an Emergency Reentry to locate and rescue the last injured worker (Injured Worker #3). The Emergency Reentry Team locates the "unaccounted for" employee in Room 3809. Industrial Hygiene and Radiological Protection report to the Incident Command Post, assess the situation, personal protective equipment (PPE) requirements, and emergency reentry team qualifications. Radiological Control Technicians (RCTs) are directed to begin surveying the assembly area. Outside readings along the perimeters of the dock and the vehicle are significantly above background levels. RCTs continue to survey the area.

The HAC, not knowing how many drums were breached, models the worst case scenario for Building 374 EPHA for a fire in Room # 3813 involving residue drums. This should result in the HAC validating the Shift Superintendent's original classification of the event as an SAE. The HAC should relay the validating information to the Crisis Manager. The HAC must also provide information on the plume contamination around Building 374.

The Crisis Management Team and the Incident Command Organization develop and implement a strategy to mitigate the emergency. The HAC provide technical support to the strategy. The Crisis Support Staff ensures the appropriate resources are generated to support on-scene operations. The Crisis Manager appoints a Recovery Manager who initiates the Recovery planning process. The Operational Emergency Termination Criteria are used to measure the status of the emergency response.

4. SCENARIO NARRATIVE SUMMARY (continued)

Termination

When the appropriate criteria are met, the CMT has received a briefing from the Recovery Manager on the Recovery strategy, and the Crisis Manager and the DOE/RFFO Manager approve the strategy, the Crisis Manager terminates the emergency and directs the implementation of Recovery operations. The exercise is terminated when the Exercise Director is satisfied that all objectives have been evaluated.

4.1 EXERCISE EVENT SCENE LOCATION MAP

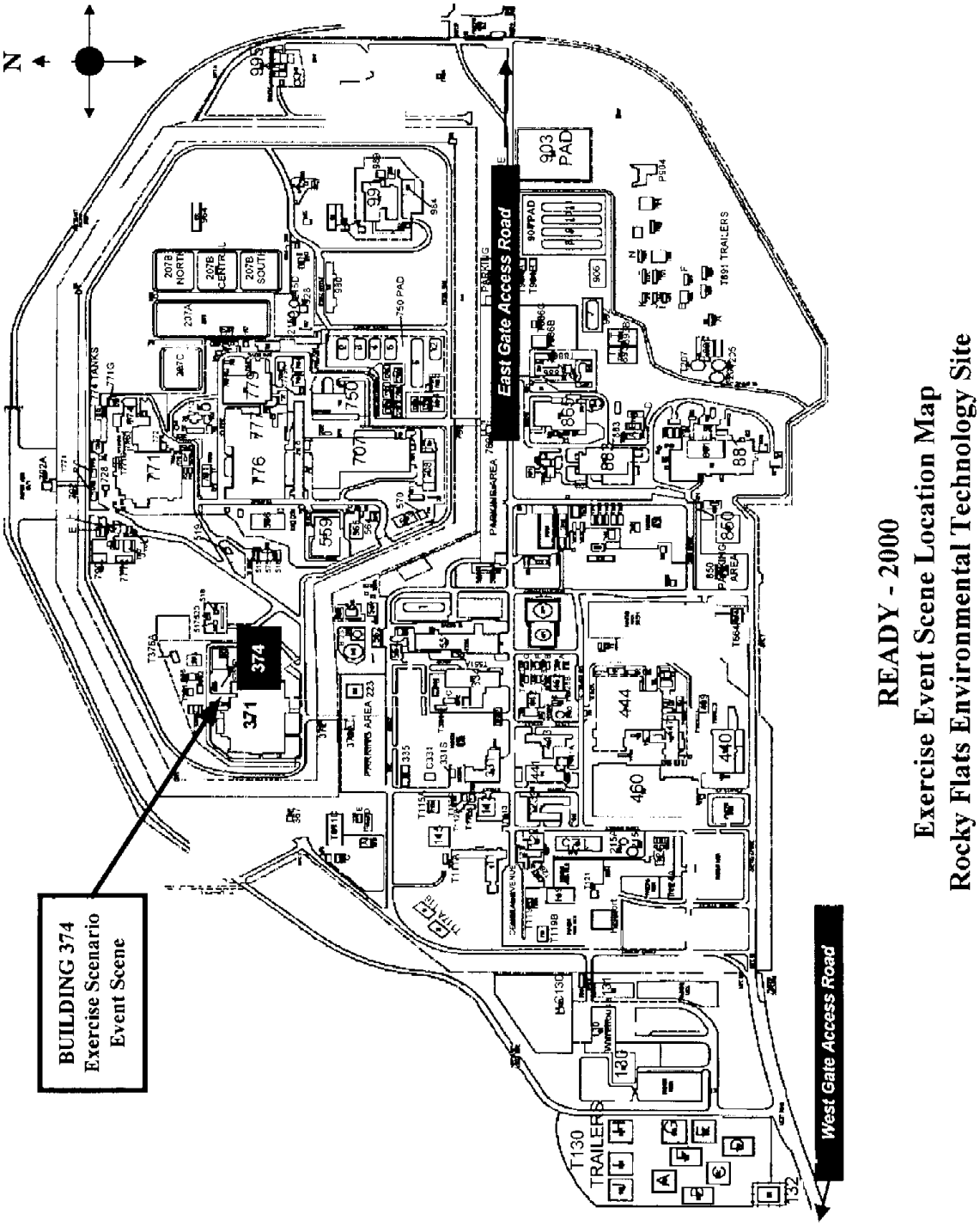


Figure 1 – Exercise Event Scene Location Map

4.2 EXERCISE EVENT SCENE GRAPHIC

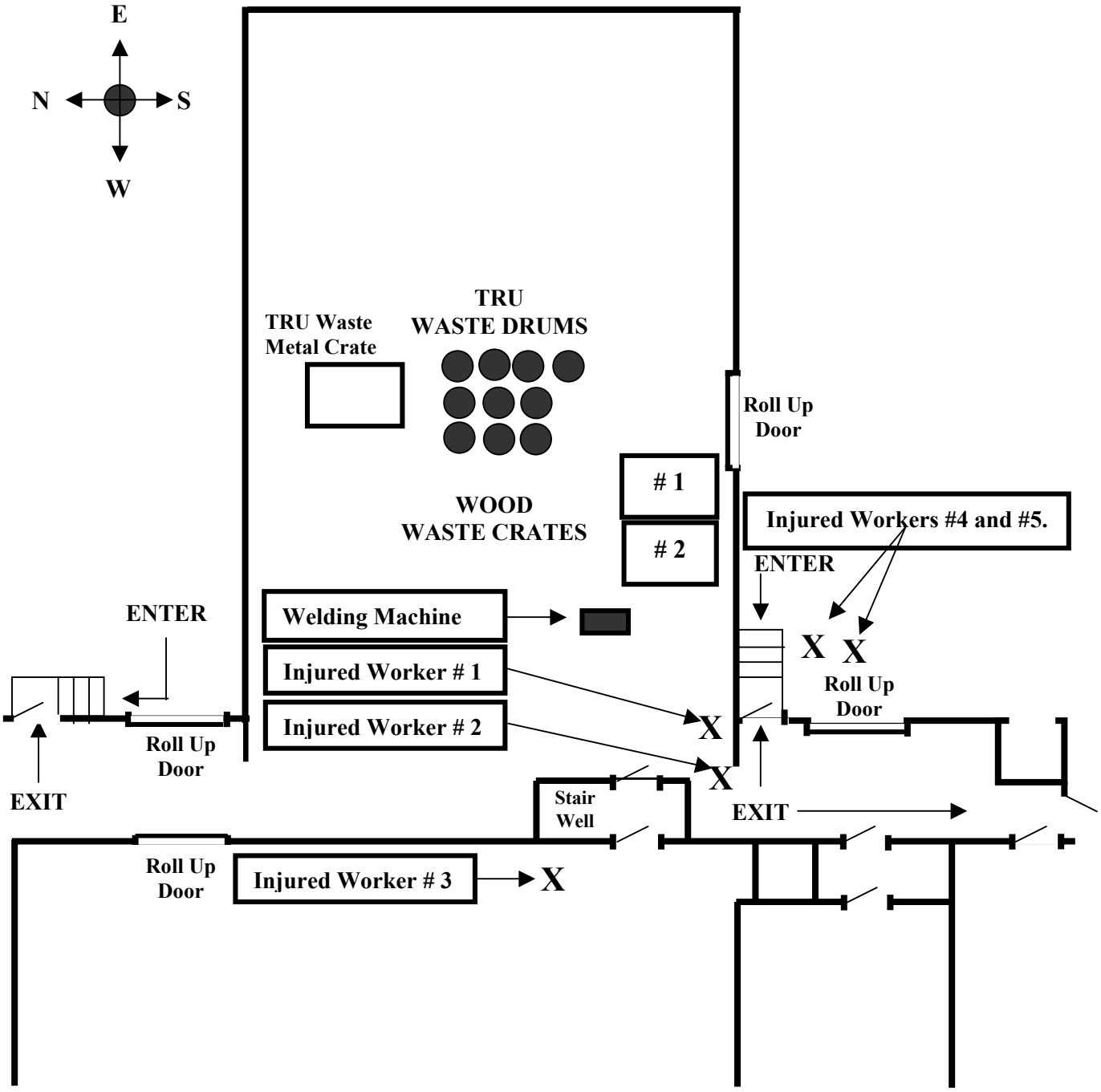


Figure 2 – Exercise Event Scene Graphic

4.3 BUILDING 371/374 EVACUATION ASSEMBLY AREA MAP

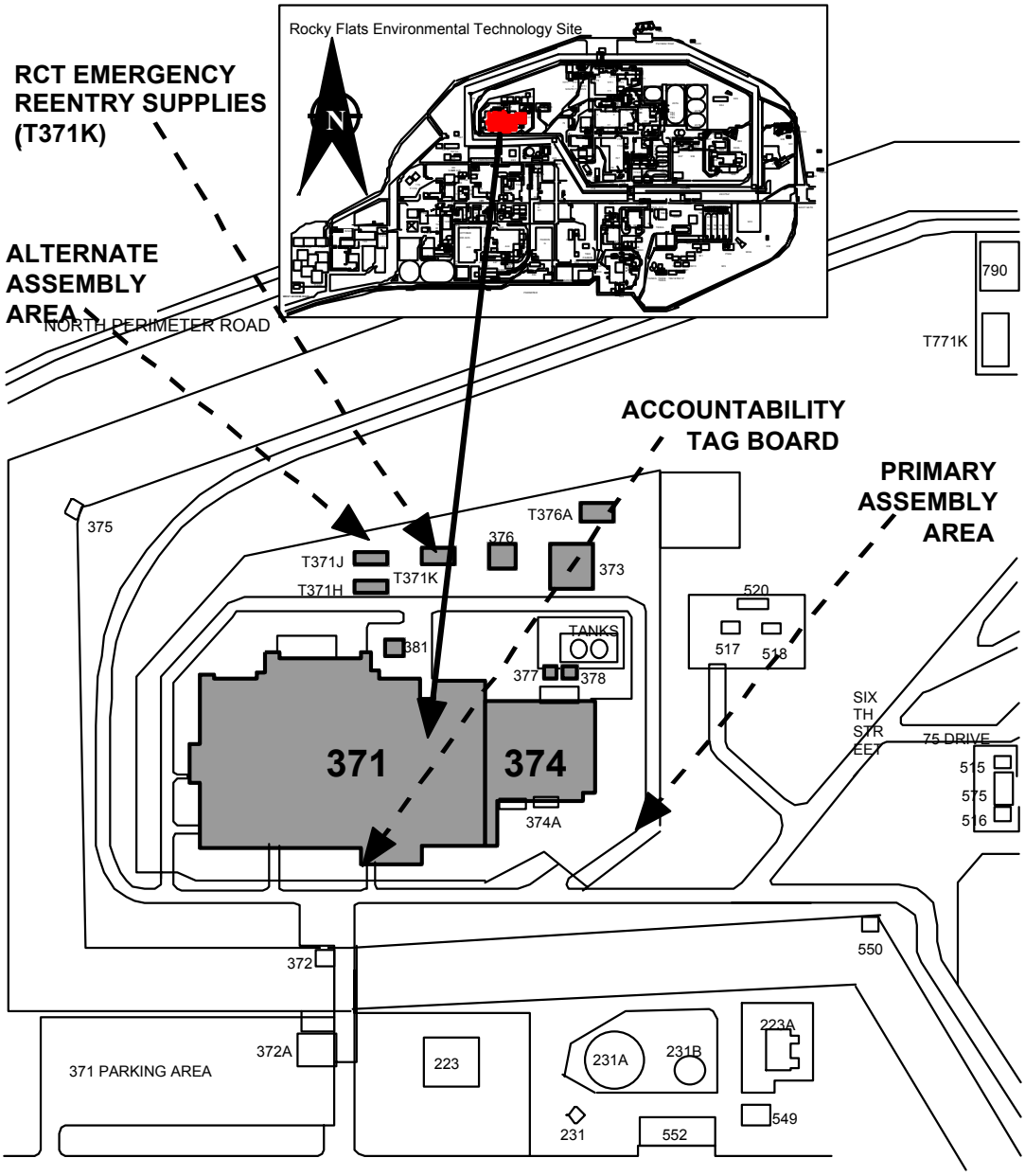


Figure 3 – Building 371/374 Evacuation Assembly Area Map

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST

Time	Msg #	Event/Activity
- 24:00 06/20/00		A Sitewide LS/DW and Audex Message is made to inform all employees that the Site will be conducting the *READY– 2000* full participation exercise on Wednesday, June 21, 2000.
- 24:00		Complete exercise event scene setup in Room 3813, Building 374. The props and equipment necessary to simulate the postulated emergency event are pre-staged and configured in accordance with Figure 2, Exercise Event Scene Graphic.
- 24:00		Complete Exercise Control Cell Setup. Telephone, facsimile, radio, or computer checks are conducted.
- 24:00		Offsite agencies and organizations contacted to confirm their participation and to address final questions concerning their role and response.
- 24:00		Briefing conducted for Injured Worker Controllers/Role Players by Occupational Medicine/EMS Controller.
- 24:00		Exemption List of Organizations and Employees is finalized. Exempt badges and vehicle signs are issued.
- 24:00		Vehicle(s) for the transport of Role Players/Injured Worker Controllers Players and other key exercise controllers are procured and staged. • Arrange for security clearance/escort into the PA and to Building 374.
- 02:00		Event Scene Role Players undergo Moulage and are issued final MED Cards to facilitate their role in the simulation of exercise scenario events resulting in the injury of five (5) workers.
- 02:00		Controllers/Evaluators issued radios, vests, badges, hats, clip boards, final exercise documentation and instructions.
- 01:00		Observers and Visitors issued badges, vests, or hats and linked with escorts.
- 00:45		Role Players/Injured Worker Controllers and other key exercise controllers depart for Building 374, after screening by SPO's.
- 00:30		Controllers, Evaluators, Role Players, Observers, and Visitors take up their assigned positions and prepare to initiate the exercise. Lead Controllers and Evaluators position their assigned staff and provide final instructions.
- 00:30		Complete final setup and preparations for the simulation of the postulated emergency event in Room 3813, Building 374. The status and readiness to initiate the exercise is reported to the Control Cell Staff and Exercise Director.
- 00:30		Control Cell staff conduct radio and telecommunications checks, finalize preparations for the conduct of the exercise, and confirm the readiness of Controllers and Role Players to initiate the exercise.
- 00:30		Contact and liaison established with the DOE/HQ EOC, State EOC, and Northwest Region Incident Management Group exercise controllers or coordinators.
- 00:30		Control Cell staff conduct final radio checks and confirms the readiness of Controllers, Evaluators, and Role Players to initiate the exercise.

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
- 00:10		The Control Cell provides time hack and current weather conditions to all Controllers.
- 00:05		Control Cell Staff confirms readiness to initiate the exercise with Lead Controllers at the event scene and with other key exercise control positions.
- 00:01		The Exercise Director instructs the Lead Controllers at the scene to initiate the exercise and report the status of the required actions when completed.
- 00:01		All actions required for the simulation of the exercise scenario event and to commence exercise play are initiated and reported to the Control Cell and Exercise Director.
- 00:01		The Exercise Control Organization is notified by an all nets radio announcement or by telephone that the exercise has been initiated and the exact time of initiation, to include: • DOE HQ EOC • State EOC • North Region Incident Management Group *Control Cell Note: The Controllers or Coordinators for the exercise activities of these organizations should be contacted and provided a status report every 30 minutes, or as needed to facilitate their participation.*
- 00:01		All other supporting offsite Controllers and/or Participant Organization Coordinators are notified that the exercise has been initiated, to include: • Broomfield Ambulance Services • Pridemark Ambulance Services • University Hospital • St. Anthony's North Hospital • Coal Creek Volunteer Fire Department *Control Cell Note: The Controllers or Coordinators for the exercise activities of these organizations should be contacted and provided a status report every 30 minutes, or as needed to facilitate their participation.*
00:00		**INITIATE THE EXERCISE (Scheduled: 08:00)**

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
00:00	**Exercise Msg. #1**	**Controller #16:** Inject Exercise Message #1. This message is initiated by the on scene Role Player/Injured Worker #3 who has been designated to make the initial report of the postulated emergency event in Room 3813, by using a radio and calling 2911. The worker is located in Room 3809. *Controller Note:* • *Ensure that all-physical and visual simulations and role player activities have been properly initiated prior to injecting this exercise message.* • *Ensure that all stipulated details concerning the emergency event are reported correctly to the Fire Dispatch Center by the designated Role Player/Injured Worker #3.*
00:01		The Fire Dispatch Center receives a "radio" 2911 call from Role Player/Injured Worker #3 at the scene to report a fire and personnel casualties in Room 3813, Building 374. *Controller Note: Ensure that all stipulated details concerning the emergency event are logged and reported correctly by the Fire Dispatch Center staff.*
00:03	**Exercise Msg. #2**	**Controller #16:** Inject Exercise Message #2. The message is initiated by the Role Player (Worker #3), designated to report the occurrence and consequences of the postulated emergency event in Room 3813 to Facility Management (CCA) by radio. *Controller Note:* • *Ensure that all-physical simulations and role player activities have been properly initiated prior to injecting this message.* • *Worker #3 in Room 3809 will use a radio to report the postulated emergency event in Room 3813.* • *Ensure that all stipulated details concerning the emergency event are reported correctly to Facility Management (CCA) by the designated Role Player (Worker #3).*
00:03		The on duty dispatcher in the Fire Dispatch Center, after confirming the reported details and consequences of the emergency event, immediately dispatches the required Fire Department Units to the scene of the emergency at Building 374. The "tone-out" of the fire barn is also received by the Shift Superintendent, the CAS and the SAS.

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
00:05	**Exercise Msg. #3**	**Controller #25:** Inject Exercise Message #3. The message provides information concerning conditions in Room 3813. Thick acrid smoke laden with radioactive constituents prohibits the access of the BEST Team to the scene of the emergency. However, this condition also warrants the establishment of a radiological "hot line" where surveys have detected the presence of surface contamination, and later air borne contaminants consistent with Zones A and B. *Controller Note:* • *Ensure that proper radiological survey techniques are used to demarcate contaminated areas of Building 374.* • *Ensure that radiological survey results provided as dynamic injects to RCTs are consistent with those noted for Zones A and B, surface and airborne contamination levels.* • *Ensure that all stipulated data regarding the levels of surface or airborne contamination in a particular area of concern is reported correctly.*
00:07		When notified of the emergency event in Room 3813, Facility Management of Building 371/374 assumes Incident Command and initiates the required protective actions and notifications using the Building Emergency Response Organization Procedure developed for the facility. This includes the notification of the Shift Superintendent of any hazardous material involved in the emergency.
00:07		Fire Department Units arrive at the scene and establish an Incident Command Post (ICP) upwind from Building 374, based on prevailing weather conditions at the time.
00:10		Following an initial assessment of the situation by Facility Management, a Building LS/DW announcement is made. The announcement informs workers of the emergency, initiates a controlled evacuation of the facility, and instructs BEST personnel to report to the scene of the emergency event in Room 3813. Other required emergency response actions are then initiated as detailed in established facility emergency response procedures.
00:12	**Exercise Msg. #4**	**Controller #19:** Inject Exercise Message #4. Provides information to the Fire Department concerning the conditions on approach to Room 3813. *Controller Note:* • *Ensure that the Fire Captain in charge clearly understands the details of the conditions at the scene.*

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
00:12		The Fire Department enters Room 3813 and affected areas of Building 374, accompanied by an RCT: • Performs an initial size up of conditions inside Building 374, specifically in Room 3813, and reports the conditions noted at the scene of the emergency event to the Forward Fire Command Battalion Chief. • Conducts search and rescue operations for injured workers. • Executes initial or required actions to mitigate the emergency. *Controller Note: Only 4 of 5 injured and/or missing workers will be recovered during the initial entry search and rescue operations conducted by the Fire Department. Worker #3, who made the initial "fire phone" call has been overcome by smoke and is lying unconscious out of view near the Fire Phone in Room 3809.*
00:13		Upon entering Room 3813 of Building 374, it is discovered that the fire is still burning, with Injured Workers #1 and #2 laying on the floor in close proximity to the burning wooden waste crates. The Initial Entry Team Fire Captain subsequently calls for assistance to suppress and mitigate the fire and quickly recovery the casualties at the scene. *Controller Note:* • *Fire hoses will be laid but not charged during any portion of the exercise.*
00:13		Shortly after the Fire Department arrives at the scene, Injured Workers #4 and #5 exit from the Southwest door to Room 3813 and Building 374, and make their way towards the ICP now being established by the Fire Department.
00:15	**Series 1 MED Cards #1-1 #1-2**	**Controller #11:** Inject Series 1 MED Cards. Provides information regarding the medical status and injuries sustained by Injured Workers #4 and #5 as earned by the responding fire fighters at the scene. *Controller Note:* • *The MED Card data or information may be augmented with dynamic injects that are not scripted. These dynamic injects will be provided as the situation dictates during the assessment, treatment, survey, or transport of the injured workers.* • *Ensure that the status and condition of the injured workers is reported correctly by attending personnel to the Forward Fire Command, ICP, or CMT.*
00:15		The Shift Superintendent completes an initial assessment of the situation, and initiates the required emergency response actions as detailed in established emergency response procedures and the Site Emergency Plan.

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
00:15		SPO Units and Lima 2 arrive at the scene and begin efforts to cordon off and control the area immediate to the scene and Building 374.
00:20		The Shift Superintendent declares a **"Site Area"** operational emergency, the most conservative classification based on available information: • Makes the required offsite and onsite notifications. • Directs required protective and emergency response actions be taken sitewide. • Directs the broadcast of a sitewide LS/DW announcement to notify personnel of the emergency and to initiate the required protective actions. • Directs the activation of the EOC and recall of all personnel necessary to facilitate the required response to the postulated emergency event. • Initiates other emergency response actions as required or deemed appropriate based on the potential consequences of the postulated emergency event. *Controller Note: Ensure that the Shift Superintendent initiates the appropriate actions in context with the exercise scenario and postulated consequences of the simulated emergency event.*
00: 20		A DERS pager message is broadcast from the Fire Dispatch Center to mobilize the response of all RFETS ERO staff and organizations including the staff of the offsite OCC and JIC.
00:20		The Fire Battalion Chief at the scene receives a briefing from Building 371/374 Management (CCA) and the accounts of the emergency events obtained from available witnesses, Injured Workers #4 and #5: • Assumes Incident Command for the emergency following the briefing by Facility Management. • Begins planning for initial emergency response reentry of Room 3813 and affected areas of Building 374. • Establishes access control at the scene and ICP in conjunction with on scene SPO Units and Facility Management. • Informs the Shift Superintendent of conditions at the scene and the best route to the location of the ICP. • Requests the dispatch of Radiological Safety personnel to the ICP to support required emergency response operations.
00:20		The Shift Superintendent departs the EOC for the Incident Command Post established by the Fire Department upwind and within a visual distance to Building 374. • Requests that all ICP support staff report to the ICP to facilitate the required emergency response.

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
00:22	**Exercise Msg #5**	**Controller #19:** Inject Exercise Message #5. Provide Fire Sector, 374 Command, Interior with description of interior of Room 3813 when the fire has been extinguished. *Controller Note:* *Ensure that the Fire Captain in charge clearly understands the details of the conditions at the scene, associated consequences, and the extent of damage to the Waste Crates and Drums.*
00:25	**Series 1 MED Cards #1-3 #1-4**	**Controller #11:** Inject Series 1 MED Cards. Provides information regarding the medical status and injuries sustained by Injured Workers #1 and #2, as earned by the responding Initial Entry Team fire fighters conducting search and rescue operations. *Controller Note:* • *The MED Card data or information may be augmented with dynamic injects that are not scripted. These dynamic injects will be provided as the situation dictates during the assessment, treatment, survey, or transport of the injured workers.* • *Ensure that the status and condition of the injured workers is reported correctly by attending personnel to the Forward Fire Command, ICP, or CMT.*
00:25		The Shift Superintendent arrives at the scene, sets up, and receives a briefing on the nature and consequences of the emergency event, as well as ongoing emergency response actions by the Fire Battalion Chief, Facility Management, and available witnesses. Following the briefing the Shift Superintendent assumes Incident Command.
00:25		EOC and Functional Work Center staff begins to arrive at their assigned positions. The OCC and JIC staff departs the Site for their assigned positions at the State EOC, located at Camp George West, Golden, Colorado. The DOE Representative on the staff of the North Region Incident Management Group also departs for his assigned position at the Jefferson County Airport.
00:25	**Exercise Message #6C**	**Controller #6.** If Fire Dispatch requests an air ambulance for transport of injured workers, inject Exercise Message #6C, which notifies Fire Dispatch that an Air Ambulance is not available.

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
00:25	**Exercise Msg. #7**	**Controllers #25, 26, 27, 28, 29:** Inject Exercise Message #7 as appropriate to the RCTs entering Building 374. This exercise message provides for the dynamic inject of radiological data and information to the RCT(s) on the levels of contamination inside of the facility. *Controller Note:* • *All fire fighters entering Building 374, and in particular Room 3813, are expected to have very high levels of detectable surface contamination of their clothing and exposed skin.* • *Ensure that proper radiological survey techniques are used before providing data or information on the levels of contamination present on personnel or in the areas being surveyed.* • *Ensure that the radiological survey data for surface or airborne contamination are consistent with the levels noted for Zones A, B, or C.*
00:30		The evacuation and personnel accountability process for the Building 371/374 complex is completed. It is subsequently reported to Facility Management and the Shift Superintendent at the ICP, that five (5) workers are unaccounted for and presumed to still be inside Building 374 in the vicinity of Room 3813. • This information is then relayed to the Forward Fire Command, and EOC. • Information concerning conditions at the scene of the emergency and the associated consequences of this event are also reported to EOC.
00:30	**Exercise Msg. #8**	**Controller #18.** Inject Exercise Message #8. This message provides information concerning the names of workers that are unaccounted for, and believed to still be inside Building 374 in the vicinity of Room 3813. The message will be initiated by Role Player Worker #6 who serves as an eye witness to the emergency events in Room 3813 and verifies the names of the workers (Injured Workers #1 through #5) that were known to be working in the area at the time.

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
00:40	**Series 2 MED Cards #2-1 #2-2 #2-3 #2-4**	**Controllers # 11 & 25:** Inject Series 2 MED Cards. Provides information on the medical status, injuries, and levels of contamination for Injured Workers #1, #2, #4 and #5 as earned by fire fighters and radiological control technicians performing medical assessments, treatment, and radiological surveys at the medical treatment and radiological "hotline." *Controller Note:* • *The MED Card data or information may be augmented with dynamic injects that are not scripted. These dynamic injects will be provided as the situation dictates during the assessment, treatment, survey, or transport of the injured workers.* • *Ensure that the status and condition of the injured workers is reported correctly by attending personnel to the IC, or CMT.*
00:45		The EOC has been staffed and is declared operational. The Crisis Manager assumes overall responsibility for sitewide emergency response operations: • The HAC Manager requests a report on the conditions at the scene, type of hazardous materials involved, and initial radiological survey results inside the facility or in the areas immediately outside and within 100 meters of Building 374. Following an assessment based on this data; onsite protective actions and offsite protective action recommendations are validated. • Other EOC staff initiate the required emergency response actions as directed or required based on the scenario event. • Contact and liaison established with the DOE/HQ EOC, State EOC, and North Region Incident Management Group. This liaison will be maintained throughout the course of the exercise.
00:45		All required IC Support Staff have arrived on scene at the ICP: • The Shift Superintendent conducts an ICP Staff briefing and begins the planning of required emergency response and the mitigation of the emergency. • Requested offsite ambulance and fire service units also begin to arrive onsite at the designated staging area.
00:50		A Sitewide LS/DW announcement is made to inform personnel of the status of the emergency event at Building 374, and the continuance of required protective actions (sheltering).
00:55		Four (4) of the five (5) missing personnel within Room 3813 and Building 374 have been found, assessed and initially treated medically, and evacuated from the affected area to the medical treatment and radiological "hot line" for further assessment and survey for contamination.

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
01:00		The OCC, JIC, and the North Region Incident Management Group have been staffed as required and declared operational. *Controllers Note:* • *Ensure that liaison and communications are established and maintained with the Controllers or Coordinators for the exercise activities planned for these offsite emergency management organizations.* • *Ensure that the necessary data, message injects, or information is provided to these organizations to facilitate their participation in the exercise, as required.*
01:00	**Exercise Msg. #9**	**Controller #11:** Use Exercise Message #9 to ensure the proper transport and disposition of the injured workers extracted from Building 374. This message provides the information for which worker(s) is actually to be transported and which would be simulated.
01:00		Based on the information received and validated on the status, conditions, and consequences of the scenario event in Building 374, the Shift Superintendent conducts an ICP Staff briefing: • Solicits input on mitigation strategies, results of radiological surveys or other assessment actions, and ongoing emergency response operations inside Building 374. • Provides a detailed report to the Crisis Manager concerning the status, conditions, and consequences of the emergency event.
01:00	**Exercise Msg. #10**	**Controllers #25, 26, 27, 28, 29:** Inject Exercise Message #9 as appropriate to RCTs surveying the outside of Building 374. This exercise message provides for the dynamic inject of radiological data and information to the RCT(s) on the levels of contamination outside of the facility, particularly those within 100 meters of Building. *Controller Note:* • *All fire fighters entering Building 374, and in particular Room 3813, are expected to have very high levels of detectable surface contamination of their clothing and exposed skin.* • *Ensure that proper radiological survey techniques are used before providing data or information on the levels of contamination present on personnel or in the areas being surveyed.* • *Ensure that the radiological survey data for surface or airborne contamination are consistent with the levels noted for Zones A, B, or C.*

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
01:10	**PI and Media Msg. Series**	**Public Information and Media Controllers/Role Players in the Control Cell**: Initiate the placement of telephone calls to the JIC at the State EOC, and the RFETS EOC, to simulate media requests and public inquiries for information concerning the postulated emergency events at Building 374. *Controller Note:* • *Ensure that PI and Media Messages are injected as scripted and planned.* • *Continue to inject of PI and Media Messages until all planned activities or objectives are completed or satisfied by the JIC and RFETS EOC.*
01:15		Following the briefing, it is confirmed that one worker (Injured Worker #3) was seen inside Building 374 just before the occurrence of the emergency event, but remains missing and is presumed to be still inside the facility. • In consultation with the Crisis Manager, ICP Staff, and Facility Management, the Shift Superintendent elects and begins Emergency Reentry planning to rescue the missing worker (Worker #3).
01:15	**Series 3 MED Cards #3-1 #3-2**	**Controllers #11 & 25:** Inject Series 3 MED Cards. These messages provide information on the medical status, injuries, and levels of contamination for Injured Workers #4, and #5 as earned by medical staff or radiological control technicians. This data will be provided in the form of dynamic injects when attending personnel correctly perform assessments, treatment, surveys, or decontamination activities on injured workers after their transport to Occupational Medicine, Building 122, or to a local area hospital. *Controller Note:* • *The MED Card data or information may be augmented with dynamic injects that are not scripted. These dynamic injects will be provided as the situation dictates during the assessment, treatment, survey, or transport of the injured workers.* • *Injured Worker #1 is the most severely injured and will be the only patient actually transported offsite to St. Anthony's North Hospital. The transport of all other injured workers (Worker #2, #4 and #5) to offsite hospitals will be simulated.* • *Ensure that the status and condition of the injured workers is reported correctly by attending personnel to the Forward Fire Command, ICP, or the EOC.*

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
01:20		The Emergency Reentry planning to conduct search and rescue operations for the missing worker (Injured Worker #3) is completed and approved by the Crisis Manager.
01:20	**Exercise Msg. #11C**	**Controllers 13 & 19#** Inject Exercise Message #10C as appropriate. Once the Emergency Reentry Team enters Building 374, the exercise message provides instructions to the Team to search only those rooms immediate to Room 3813 for the missing Injured Worker #3, who is located out of sight near the Fire Phone in Room 3809.
01:20	**Exercise Msg. #12**	**Controller #25, 26, 27, 28, or 29** Inject Exercise Message #11. Once the Emergency Reentry Team enters Building 374, the exercise message provides for the dynamic inject of radiological data and information to the RCT(s) on the Team in the areas in and adjacent to Room 3813. *Controller Note:* • *Ensure that proper radiological survey techniques are used before providing data or information on the levels of contamination present in the areas being surveyed.* • *Ensure that the radiological survey data for surface or airborne contamination are consistent with the levels noted for Zones A and B.* • *Ensure that radiological survey data is correctly reported to the Forward Fire Command, ICP, or EOC.*
01:20		The Radiological FST(s) deployed by direction of the HAC Manager, arrive at their assigned survey points and begin conducting surface and airborne radiological surveys.
01:20	**Exercise Msg. #13**	**Controllers 31 & 32:** Inject Exercise Message #12. Once the Radiological FST(s) arrive at their assigned survey points and begin conducting surface and airborne, the exercise message provides for the dynamic inject of radiological data. *Controller Note:* • *Ensure that proper radiological survey techniques are used before providing data or information on the levels of contamination present in the areas being surveyed.* • *Ensure that the radiological survey data for surface or airborne contamination are consistent with the levels noted for Zones C, D, and E.* • *Ensure that radiological survey data is correctly reported to the Forward Fire Command, ICP, HAC, CSS, or CMT.*

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
01:45		The Emergency Reentry Team discovers Worker #3 near the Fire Phone in Room 3809, and informs the Incident Commander, who relays the information to the CM. Radiological surveys of the affected areas in Building 374 indicate high levels of contamination, as noted for Surface and Airborne Contamination Levels in Zones A and B.
01:45	**Series 4 MED Card #4-1**	**Controllers #11 &25** Inject Series 4 MED Card. Provides information regarding the medical status and injuries sustained by Injured Worker #3 only, as earned by the Emergency Reentry Team conducting the search and rescue operation. *Controller Note:* • *The MED Card data or information may be augmented with dynamic injects that are not scripted and provided as the situation dictates during the assessment, treatment, or survey, or transport of the injured workers.*
01:50	**Series #5 MED Card #5-1**	**Controller 11 & 25** Inject Series #5 MED Cards as appropriate: Provides information on the medical status, injuries, and levels of contamination for Injured Worker #3, as earned by fire fighters and radiological control technicians performing medical assessments, treatment, or radiological surveys at the medical treatment and radiological "hotline." *Controller Note:* • *The MED Card data or information may be augmented with dynamic injects that are not scripted and provided as the situation dictates during the assessment, treatment, or survey, or transport of the injured workers.*
02:00	**Series #6 MED Card #6-1**	**Controllers 43 & 33:** Inject Series 6 MED Cards as appropriate: The message provides information on the medical status, injuries, and levels of contamination for Injured Worker #3 as earned by medical staff or radiological control technicians. This data will be provided in the form of dynamic injects when attending personnel correctly perform assessments, treatment, surveys, or decontamination activities on injured workers. *Controller Note:* • *The MED Card data or information may be augmented with dynamic injects that are not scripted. These dynamic injects will be provided as the situation dictates during the assessment, treatment, survey, or transport of the injured workers.*

5. EXERCISE TIMELINE AND MASTER SCENARIO EVENT LIST (continued)

Time	Msg #	Event/Activity
02:40		As RCTs and Radiological FSTs complete the survey and demarcation of affected areas outside of Building 374, planning begins for the reentry and recovery of the facility.
02:45		A Recovery Manager is appointed by the Crisis Manager, and a staff is selected to support and facilitate the planning process.
03:15		A Recovery Plan strategy is submitted to the Crisis Manager and CMT for approval.
03:30		Following approval of the Recovery strategy, emergency response operations are suspended and the Site Area operational emergency is terminated.
11:30		When it is determined that all exercise objectives have been satisfied the exercise will be terminated.
11:35		**TERMINATE THE EXERCISE**

6. EXERCISE DATA

The following sections provide supporting data necessary to facilitate the conduct of the exercise or to provide information to participants and observers concerning the facility chosen as the site of the postulated events in the exercise scenario. In addition, data and information is provided relevant to the meteorological data to be used, radiological data postulated as a consequence of the exercise scenario event; role player and medical data for each simulated casualty, and exercise player and responder guidelines to be observed during the exercise.

6.1 FACILITY DESCRIPTION AND INFORMATION

The 374 Facility consists of Building 374 and ancillary structures. These ancillary structures include Buildings 372, 373, and 381, Structure 262, several office buildings (Building 376 and T376A and the Building 371 Trailers), and utilities. These buildings are located within and near the northwest end of the Protected Area. Building 374 is a non-reactor nuclear waste treatment facility designed to remove radioactive and chemical constituents from aqueous wastes received from numerous Site buildings. Approximately 35 employees occupy the 374 facility during the first shift.

Potentially hazardous materials were identified in Building 374. They include transuranic (TRU) waste, transuranic mixed (TRM) waste, low-level waste (LLW), low-level mixed waste (LLMW), and chemicals. The radiological hazards consist of radioactive contaminants in process waste feed and treatment streams, holdup in process vessels, radioactive sources, contamination, and other wastes. The radioactive contaminants of concern include plutonium, americium, and depleted uranium. The chemical hazard of concern is nitric acid. Identified materials were screened against defined threshold quantities. The following hazardous materials exceed the screening thresholds: nitric acid contained in tanks, and plutonium-, americium-, or uranium-contaminated materials in waste and process packages.

6.1 FACILITY DESCRIPTION AND INFORMATION (continued)

Seventeen event scenarios were developed that postulate releases of hazardous materials mentioned above. These scenarios are defined in Section 6.6, Event Scenarios, and include the following accidents: fires, spills, explosions, a criticality, an aircraft crash, and natural phenomenon events including a performance category 3 earthquake. All evaluated accidents that are filtered by one stage of HEPA filtration result in a less than an Alert emergency classification.

The most severe radiological event evaluated for the 374 Facility involves a hydrogen explosion in a residue drum on the dock with the dock doors open (RD 11-5B). The maximum distance for which the 100 rem TEDE is exceeded for this event is 300 meters. The maximum distance at which a protective action criterion (1 rem TEDE) is exceeded for this event is 12,000 meters. The scenario frequency for this event is Incredible.

The most severe credible accident is a dock fire involving three high americium residue drums with the dock doors open. The maximum distance for which the 100 rem TEDE is exceeded for this event is 60 meters. The maximum distance at which a protective action criterion (1 rem TEDE) is exceeded for this event is 4,000 meters (RD 1-3B). The scenario frequency for this event is Extremely Unlikely. Since the maximum distance to 1 rem level impact for the most severe event is Incredible, the current EPZ is valid for the 374 Facility.

The Plutonium Recovery and Waste Treatment complex consists of three main structures and functions respectively: Plutonium Recovery and Storage in Building 371, Waste Treatment in Building 374, and a Support Facility (no building number).

Ancillary structures include an electric equipment building, a former fluorine storage building now used for records storage (Building 381), a former security control station (Building 372), a cooling tower and basin (Building 373), an underground diesel fuel oil storage tank (Structure 262), (Building 377), air compressor building, (Building 378), waste collection pump house, and several office buildings (Building 376, the Building 371 Trailers, and Trailer 376A).

6.1 FACILITY DESCRIPTION AND INFORMATION (continued)

The Support Facility adjoining Buildings 371 and 374 shares some common utilities with both buildings. There is a separate EPHA for Building 371 and the Support Facility. Since the ancillary structures do not contain hazardous materials of concern, they do not pose a hazard to Site personnel or the public.

Building 374 consists of a main floor, basement, and several mezzanines. Four vapor bodies and the spray dryer furnace are mounted on support structures outside the main structure of Building 374. Building 374 houses tanks and equipment for receipt, storage, and treatment of chemically contaminated, as well as low concentration radioactively contaminated aqueous process wastes. The shipping and receiving dock (building extension) has been converted to a Resource Conservation and Recovery Act (RCRA) waste storage unit (Unit 374-1, Room 3813). It contains drums and crates of LLW/LLMW, and TRU waste. This extension from the main building structure has a metal frame supporting the roof and metal sidewalls over the concrete slab floor.

Building 374 is 140 feet wide by 145 feet long with an above-grade structural steel frame. The below-grade walls, the floors, and the roof slab are reinforced concrete. The roof slab is covered with insulation and built up roofing. The exterior walls above grade are vertical twin tee, precast concrete siding, or cast-in-place reinforced concrete. The dock walls are concrete block. Metal studs support interior panels of gypsum board. Asbestos, because of its heat-resistant property, was used as insulation in older facilities including Building 374. It is found in wallboards in the facility. The asbestos found in Building 374 is not friable, nor is it found in inventory. The exterior walls of Building 374 have a one-hour fire rating. The total floor area is 42,700 square feet including all three levels, but excluding the shared utility area in the attached support building. With the exception of the mezzanines over the drum handling and storage area and over the evaporator bay, the ground floor has a clear interior height of approximately 30 feet.

Building 374 rests on reinforced concrete caissons cast in place in holes drilled into bedrock. The maximum length of the caissons is approximately 30 feet; the maximum diameter is 5 feet. Building 374, with exception of the building extension, Room 3813 (RCRA Unit 374-1), was constructed to withstand high winds (below tornado levels) and a design basis earthquake.

6.1 FACILITY DESCRIPTION AND INFORMATION (continued)

There is a continuous air monitoring (CAM) system (alpha, beta, and gamma) and a criticality alarm system in Building 374. In addition, there is a fire alarm system and an automatic sprinkler system in the 374 Facility.

RCRA Waste Storage and Handling

There is one 90-day accumulation area and one permitted storage area. These WMUs are capable of storing a large variety of wastes. The permitted storage area is RCRA Unit 374-1 (Room 3813, and 3809/3810), containing LLW/LLMW drums, and LLMW and TRU crates. This is the only permitted storage area in Building 374. Wastes in this area are contained in drums, full-size plywood crates, and half-crates. Drums may be banded together in-groups of four and stored on metal pallets. Drums may be stored up to three high. The types of waste that may be stored in RCRA Unit 374-1 are listed by Environmental Protection Agency (EPA) waste codes and are controlled by the State RCRA Permit, Part B, the Site RCRA Operating Permit. Rejected containers holding free liquid is allowed if secondary containment pans are provided.

The Building 374 Heating, Ventilation, and Air Conditioning/High Efficiency Particulate Air (HVAC/HEPA) plenum system service RCRA Unit 374-1, in Room 3813, but its effectiveness is limited. Therefore, no credit is taken for the HVAC system at this location. One stage of HEPA filtration is credited when the HVAC system is assumed to be operational.

Building 374 Heating, Ventilation, and Air Conditioning Zones

The zones in Building 374 are classified as Zone I, the zone containing areas with the highest potential for radioactive contamination; Zone II, a buffer zone; and Zone III, a larger zone that surrounds Zone II. Zone I contains such items as pump enclosures, tanks, hoods, scrubbers, exhaust headers and exhaust filter plena that must have their ventilation air exhausted to the atmosphere through HEPA (high efficiency particulate air) filters instead of recirculating it through the ventilation system.

6.1 FACILITY DESCRIPTION AND INFORMATION (continued)

Zone III includes the non-radioactive general utility and support areas surrounding the Zone II areas. Zone II is the buffer zone of air locks and access spaces between Zones I and III. Pressure in Zone II is controlled by the ventilation system. It is intermediate between the pressures maintained in Zones I and III. There is no Zone IV in Building 374. Zone II and III return air has the benefit of 72 HEPA filters in two physically separated banks of 36 filters each. One stage of HEPA filtration is credited when the HVAC system is assumed to be operational. **RCRA Unit 374-1 (Room 3813) is serviced by the Building 374 HVAC/HEPA plenum system but its effectiveness is limited. Therefore, no credit is taken for Room 3813.**

Waste Storage

Packages of hazardous waste in the form of TRU wastes, LLW/LLMW are stored within Building 374, as described in Section 3.2.1, Facility Operations.

Waste Shipment

Currently some routine generated wastes are being stored in RCRA Unit 374-1, and some are being shipped out of Building 374.

Facility and Site Boundary

The 374-facility boundary distance is 100 meters from the perimeter of Building 374. The minimum distance from the center of Building 374 to the site boundary is 1,512 meters southwest from Building 374 determined using the GIS Methodology for Providing Distance Measurement from Selected Buildings to the Nearest RFETS Boundary.

6.2 SCENARIO EVENT TECHNICAL BASIS

Basis

Scenario 4-3 of the Building 374 Emergency Management Hazards Assessment evaluates a fire involving six (6) 55-gallon TRU waste drums and two (2) wooden waste crates. This scenario assumes that the combustible loading requirements were not violated preventing propagation of the fire to other wooden crates. The crates along with combustibles that were accidentally ignited during maintenance activities fuel the fire. The heat from the postulated fire is assumed sufficient to pyrolize the drum contents and pressurizes the drums to the point that the venting of gases containing entrained radioactive materials occurs via leakage past the lid. The crates are evaluated as contributing to the BST based on an unconfined release.

Consequences

The environmental release from this assessed event would be expected to yield 1 rem TEDE at 100 meters from the facility and 1.8 rem TEDE at the primary assembly area located approximately30 meters East of the building using most conservative weather conditions.

The initial protective action at the level of a "Site Area" operational emergency for building personnel is expected to be evacuation of the building to an upwind location, and the entire population on site instructed to shelter.

6.3 METEOROLOGICAL DATA

To facilitate the real time modeling and calculation of radiological conditions and other response strategies with respect to the postulated release of radioactive materials as a consequence of the scenario event, actual weather conditions at the time of the exercise will be used.

6.4 SIMULATIONS

The following exercise simulations are authorized for READY 2000. All other simulations (dynamic or situational) require the approval of the responsible Lead Controller or Exercise Director, unless otherwise stipulated.

- Workers #1 and #2 will be Moulage in order to simulate burns and other injuries sustained from electrocution, and their proximity to waste crate fire. Workers #3, #4 and #5 will also be Moulage in order to simulate the physical trauma associated with their injuries.

- The TRU waste drums will be realistically labeled, but also marked and labeled distinctively "FOR TRAINING USE ONLY."

- Smoke generators will be used to simulate the smoke from the fire.

- The use of water or Aqueous Film-Forming Foam (AFFF) is prohibited inside the building. Fire hoses will be laid as necessary but will not be charged. However, all other actions necessary to mitigate the consequences of the waste crate fire will be executed within the guidelines for exercise play.

- The isolation of ventilation systems.

- Transportation of injured workers (#2, # 3, #4, and 5) to an offsite hospital will be terminated at OMD or East Gate of the Site.

- Public notification or other actions affecting the general public.

- A control cell will be used to simulate non-participating offsite agencies and organizations.

NOTE: Actual PPE will be donned and used, **NOT** simulated.

6.5 RADIOLOGICAL DATA

The following provides data to support radiological operations and subsequent determinations by the Hazards Assessment Center concerning conditions at the scene of the postulated emergency event at Building 374.

	EARM	**Scenario Postulated**
Event:	Fire	Fire
Release Duration:	10 minutes	10 minutes
Temperature:	70°F	70°F
Package MAR:	• 13.2 g Pu, **class W**, (TRU drum, REP) • 0.456 g Pu, **class W**, (LLW crate, REP)	• 13.2 g Pu, **class W**, (1 TRU drum, REP) • 0.456 g Pu, **class W**, (1 crate, REP)
Total MAR:	• 198 g Pu, **class W** (15 TRU drums) • 2.3 g Pu, **class W,** (5 LLW crates)	• 79.2 g Pu, **class W**, (6 TRU drums) • 0.91 g Pu, **class W**, (2 crates, REP)
Damage Ratio:	1.0	1.0
Release from Primary Barrier:	200 g Pu, **class W**	79.2 g Pu, **class W**
Respirable Release Fraction:	• 5.0E-04 (drums) • 5.0E-02 (crates)	• 5.0E-04 (drums) • 5.0E-02 (crates)
Initial Source Term:	0.21 g Pu, **class W**	0.09 g Pu, **class W**
Leak Path Factor:	1.0	1.0
Building Source Term:	0.21 g Pu, **class W**	0.09 g Pu, **class W**

6.5 RADIOLOGICAL DATA (continued)

Radiological Survey Data for Affected Areas and Personnel

The following assumptions are made concerning radiological conditions in Rooms 3809 and 3813, and personnel affected by the consequences of the postulated emergency event.

1. The waste box and waste drum fire in Room 3813, Drum Storage Area, results in a non-lofted plume that escapes to the environment.

2. The Airborne Release Fraction is equal to Respirable Release Fraction.

3. The measurable surface contamination associated with this incident is primarily within 35 meters of the building.

4. Surface contamination data reflects the non-lofted plume uniformly decreasing away from the source.

5. The contamination in Room 3809, adjacent to Room # 3813, is a result of air leakage around the doors into the room.

6. Air sampling data is time and location dependent and samples collected after plume passage are below Minimum Detectable Activity (MDA).

7. Air sampling data near scene is the result of surface contamination resuspension.

8. These data apply to the plume path that is exercise day weather dependent.

9. All Beta, Gamma, and Neutron readings, if taken, will be “as read.”

6.5 RADIOLOGICAL DATA (continued)

Levels of Contamination for Injured Personnel

ATTENTION

Radiological release data will be available through the exercise control organization in the field. Data will be supplied to exercise participants, provided the appropriate actions to earn the data have been demonstrated by the exercise participants. Radiological release data will be available only through field controller input to the radiological safety personnel.

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm
Nasal Swab	2,000,000 dpm	333,000 cpm	500,000 cpm
All Areas after 1st Decon	30,000 dpm	5,000 cpm	7,500 cpm
All Areas After 2nd Decon	5,000 dpm	835 cpm	1250 cpm
All Areas After 3rd Decon	MDA	As read	As read

**Instrument must be in slow response and held for 22 seconds over contamination to see this level. Other wise the readings will be less than MDA for the Ludlum 12-1A.*

NOTE: When using the Ludlum 12-1A the contamination is over an area equal to two probe sizes. Injured personnel were in the area for the first five minutes of the event.

Levels of Contamination for BEST, RCTs, Fire Fighters, and Others Entering Zones A and B

AREA	RADIATION LEVELS	ELECTRA	LUDLUM
Booties/Boots	From 100,000 dpm/100cm^2 to 25,000 dpm/100cm^2 (see note.)	16,665 cpm to 4200 cpm	25,000 cpm to 6300 cpm
Gloves	60,000 dpm/100cm^2 to < MDA	10,000 cpm to < MDA	15,000 cpm to < MDA

6.5 RADIOLOGICAL DATA (continued)

Survey Data for Surface Contamination

During radiological surveys conducted in affected areas/zones around Building 374, inform the Radiological Control Technicians conducting the surveys that the following levels of contamination are present:

- **Zone A** is inside of Room 3813.
- **Zone B** is from the doors to Room 3803, 3809, and 2804 from Room 3813 to a point in each room approximately 10 meters west of the doors.
- **Zone C** is outside on the south side of Building 374 up to 100 meters.
- **Zone D** is from 100 meters to 900 meters outside of building.
- **Zone E** is from 900 to 3200 meters long and up to 120 meters wide.

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Zone A	After fire levels not wet or covered by foam are infinity inside Room 3813	Off Scale	Off Scale
Zone B	10,000 dpm/100 cm^2 at doors to 2000 dpm/100 cm^2 at 10 meters from the doors from Room 3809	1665 cpm to 335 cpm	2500 cpm to 500 cpm
Zone C	Infinity at open dock door to 2220 dpm/100 cm^2 at 100 meters and up to 10 meters wide.	Off Scale to 370 cpm	Off Scale to 1100 cpm
Zone D	2220 dpm/100 cm^2 at 100 meters to 220 dpm/100 cm^2 at 900 meters and up to 40 meters wide.	370 cpm to 37 cpm	1100 cpm to < MDA
Zone E	220 dpm/100 cm^2 at 900 meters to < MDA at 3200 meters and up to 120 meters wide.	37 cpm to < MDA	< MDA

6.5 RADIOLOGICAL DATA (continued)

Area Air Sampling Data Adjacent to Building 374

Samples taken from 30 meters to 100 meters from facility release point. All samples are based on obtaining a high volume sample at 50 cfm using a four inch filter.

Within 0 – 20 Minutes of Exercise Initiation

AREA	LUDLUM	ELECTRA
At 30 meters	3800 cpm	1265 ncpm
At 80 meters	2680 cpm	895 ncpm
At 100 meters	1920 cpm	640 ncpm

After 21 Minutes of Exercise Initiation

AREA	LUDLUM	ELECTRA
At 30 meters	600 cpm	200 ncpm
At 80 meters	450 cpm	150 ncpm
At 100 meters	300 cpm	100 ncpm

6.5 RADIOLOGICAL DATA (continued)

Field Sampling Team (FST)Air Sampling Data Based On Zones And Time

Data Basis: *All samples are based on a 10 cubic foot sample with a 4-inch filter media during the plume passage. All samples are taken with the H810DC sampler with a flow rate of 5 cfm. Assumes all samples will be counted with a Bicron Frisk-Tech with the A-100 probe with a background of 1 cpm.

AREA	AIR SAMPLE	BICRON FRISK-TECH	TIME
Zone A At 30 meters	*Based on above sample parameters	128 gross cpm	Any time after incident due to re-suspension.
Zone A At 80 meters		90 gross cpm	
Zone B At 100 meters	*Based on above sample parameters	64 gross cpm	After 20 minutes Report <MDA
Zone C At 500 meters	*Based on above sample parameters	13 gross cpm	After 30 minutes Report <MDA
Zone D At 1000 meters	Data is based on a 10 minute sampling time.	23 gross cpm	From 9 to 39 After the start of the fire.
Zone E At 1800 meters	Data is based on a 10 minute sampling time.	14 gross cpm	From 16 to 46 minutes after the start of the fire.
Zone F At 3800 meters	Data is based on a 10 minute sampling time.	< MDA	< MDA

6.5 RADIOLOGICAL DATA (continued)

Event Scene Radiological Survey Data Map

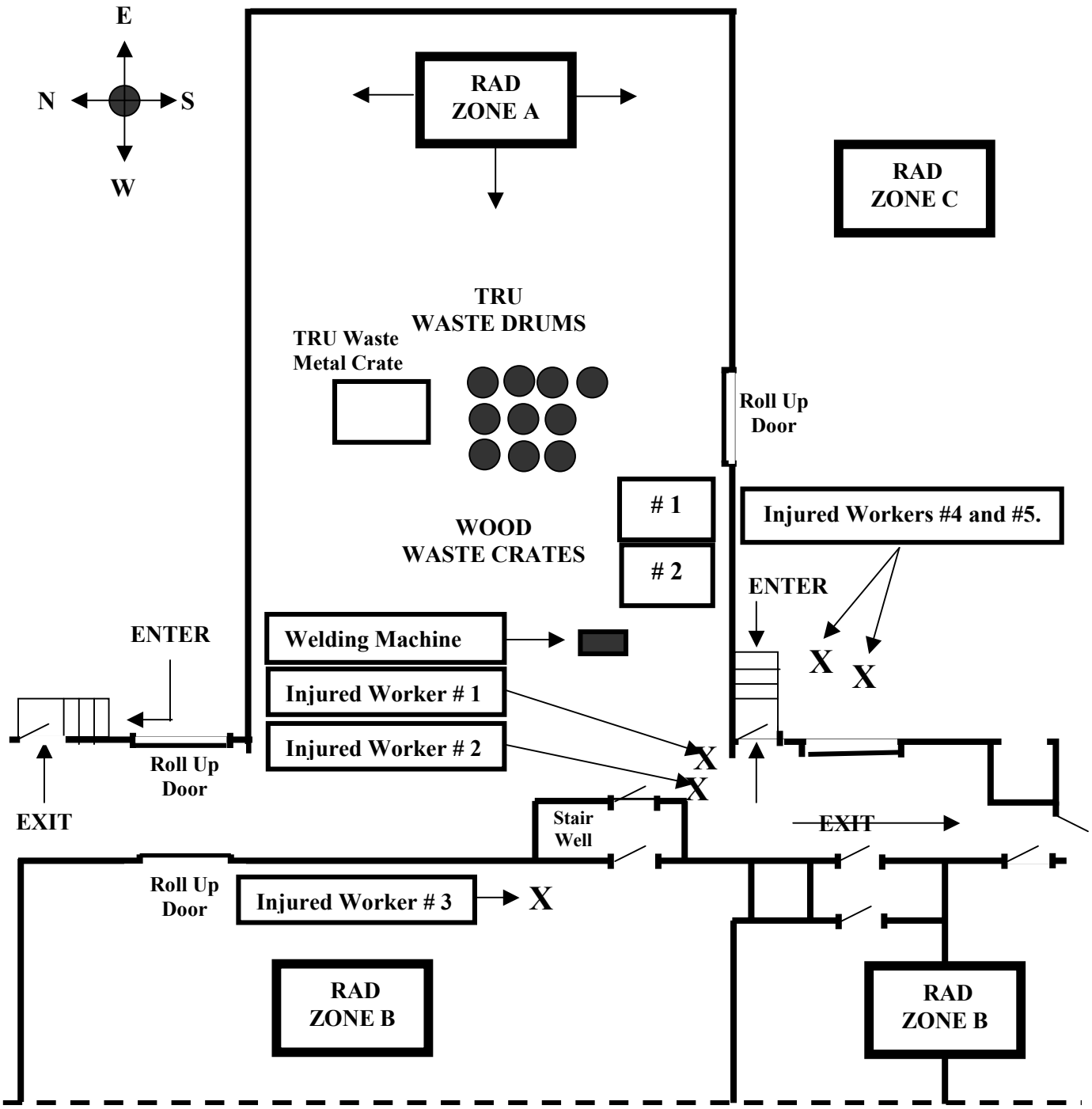
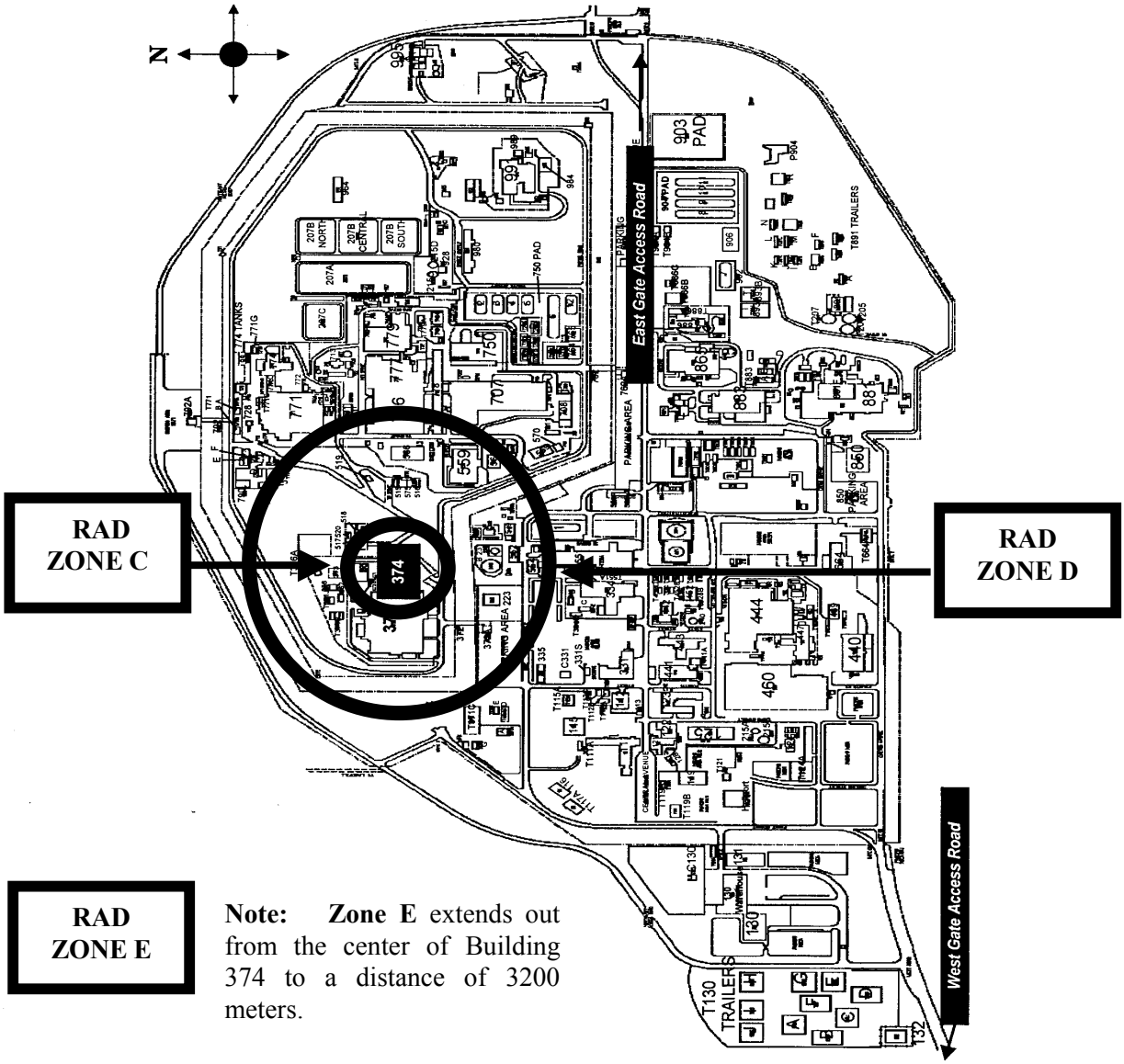


Figure 4 – Building 374 Event Scene Radiological Survey Data Map

6.5 RADIOLOGICAL DATA (continued)

Sitewide Radiological Survey Data Map



Note: **Zone E** extends out from the center of Building 374 to a distance of 3200 meters.

6.5 RADIOLOGICAL DATA (continued)

Figure 5 – Sitewide Radiological Data Map

Radiological Survey/Alpha Contamination Conversion Table

DPM VALUE (Disintegrations per Minute)	ELECTRA (Counts per Minute)	LUDLUM 12-1A (Counts per Minute)
94 dpm	16 cpm	< MDA
180 dpm	30 cpm	< MDA
250 dpm	42 cpm	< MDA
300 dpm	50 cpm	< MDA
360 dpm	60 cpm	< MDA
400 dpm	67 cpm	< MDA
450 dpm	75 cpm	< MDA
500 dpm	83 cpm	< MDA
600 dpm	100 cpm	< MDA
700 dpm	117 cpm	< MDA
800 dpm	133 cpm	< MDA
900 dpm	150 cpm	< MDA
1000 dpm	167 cpm	250 cpm
1500 dpm	250 cpm	375 cpm
2000 dpm	333 cpm	500 cpm
5000 dpm	830 cpm	1,250 cpm
10,000 dpm	1,670 cpm	2,500 cpm
20,000 dpm	3,330 cpm	5,000 cpm
50,000 dpm	8,300 cpm	12,500 cpm
100,000 dpm	16,700 cpm	25,000 cpm
250,000 dpm	41,666 cpm	62,500 cpm
500,000 dpm	83,000 cpm	125,000 cpm
750,000 dpm	125,000 cpm	187,5000 cpm
1,000,000 dpm	166,666 cpm	250,000 cpm
2,000,000 dpm	333,333 cpm	500,000 cpm
3,000,000 dpm	500,000 cpm	750,000 cpm
4,000,000 dpm	670,000 cpm	1,000,000 cpm
5,000,000 dpm	830,000 cpm	*Infinity*
6,000,000 dpm	1,000,000 cpm	*Infinity*
7,000,000 dpm	*Infinity*	*Infinity*

Note: In providing radiation levels for swipes surveyed with the Ludlum 12-1A, multiply the cpm value x 2. The Ludlum cannot accurately detect more than 1M cpm, any count higher is read as *infinity*.

6.6 ROLE PLAYER MEDICAL DATA

Worker # 1

- Male, approximately 35 years of age.
- Cause of Injuries: Electrocution
- Physical Signs/Symptoms: Entrance wound through right hand, an exit wound through right thigh. Wounds include second and third degree burns to hand, skin is peeled off of three fingers with charring (eschar) to edges and redness to center of burns. Thigh has mostly 2nd degree burns with a great deal of redness and slight charring to edges. Tissue damage is deep with nerve and muscle involvement. There is minimal bleeding from either wound. Patient also exhibits dysrhythmia, including sinus tachycardia, but is unconscious with shallow respirations.
- Heart Rate: 140
- Blood Pressure: 100/60
- Respiration's: 6

6.6 ROLE PLAYER MEDICAL DATA (continued)

Worker # 2

- Female, approximately 30 years of age.
- Cause of Injuries: Electrocution
- Physical Signs/Symptoms: Minor burns to bilateral hands, mental status changes including confusion. Skin is clammy, pale with slightly ashen hue and circumoral cyanosis. Minor burns bilaterally to the hands, mental status changes including confusion. Skin is clammy and pale with slightly ashen hue.
- Pulse: 60
- Blood Pressure: 108/60
- Respiration's: 16

6.6 ROLE PLAYER MEDICAL DATA (continued)

Worker # 3

- Female, approximately 30 years of age.
- Cause of Injuries: Blunt trauma to the head after fall.
- Physical Signs/Symptoms: Open 3" laceration to the scalp with significant hemorrhaging. Possible concussion. Pupils are unequal and slow to react. Patient is conscious but shows signs of confusion and disorientation to the surroundings and when questioned. (Name, day of week, birthday, etc.)
- Pulse: 100
- Blood Pressure: 110/62
- Respiration's: 12

6.6 ROLE PLAYER MEDICAL DATA (continued)

Worker # 4

- Male, approximately 25 years of age.
- Cause of Injuries: Blunt trauma and fracture of the left arm after being caught in a door forcibly closed inadvertently by another employee while evacuating Room 3813 of Building 374.
- Physical Signs/Symptoms: Open fracture of the left ulna and radius. Artery severed cleanly, no jagged edges, very little blood. Patient exhibits typical signs and symptoms of shock.
- Pulse: 120
- Blood Pressure: 90/60
- Respiration's: 30

6.6 ROLE PLAYER MEDICAL DATA (continued)

Worker # 5

- Male, approximately 45 years of age.
- Cause of Injuries: Patient was attempting to extinguish the fire in Rook 3813, when flames shot up and ignited his beard. The employee inadvertently inhaled out of surprise resulting in serious burns to oral and nasal cavities, larynx and bronchial tree.
- Physical Signs/Symptoms: The patient exhibits labored respiration's, shortness of breath, productive cough, dyspnea and cyanosis. The lips are cynotic. Pupils are responsive. There are visible signs of 1st and 2nd degree facial burns around chin, nose, and lips, with singed eyebrows, lashes and hair at the scalp line.
- Pulse: 80
- Blood Pressure: 116/80
- Respiration's: 26

6.7 PLAYER AND RESPONDER GUIDELINES

- Players shall not have prior knowledge of the scenario. Players who have gained knowledge of scenario specifics prior to the exercise are expected to consult with the exercise director or their responsible manager to determine their eligibility to participate in the exercise.

- The exercise scenario shall not include any actions or situations that will degrade the condition of systems, equipment or affect the detection and assessment of actual emergencies, or of the capability for response to actual emergency events or conditions.

- No actions shall be initiated which involve the actual operation of Site equipment or that may adversely affect the operating capability of the Site or a facility.

- Emergency response facilities will not be pre-activated and response personnel will not be pre-staged. Players will follow their normal work routines until exercise events cause them to initiate emergency response or mitigation actions.

- Site personnel will respond to and implement all protective actions as directed by Facility Managers, Configuration Control Authorities, the Shift Superintendent, Incident Commander, Security Police Officers, or other responsible authorities as directed.

- Except for the actions identified in the list of actions to be simulated, or as otherwise directed by exercise controllers, players are to respond to exercise events and information as if the emergency were real.

- Players shall act as if simulated hazardous conditions were real. All normally required industrial hygiene, radiological controls, and occupational health and safety requirements shall be observed for the simulated hazard(s) presented by the exercise scenario.

- Exercise controllers and evaluators are exempt from simulated security and industrial/health protection controls (only) which would be required by exercise conditions.

6.7 PLAYER AND RESPONDER GUIDELINES (continued)

- Exercise participants shall take no action that reduces the safety of RFETS employees or the public.

- Exercise participants shall adhere to public laws including traffic regulations and follow any orders given by law enforcement personnel.

- Exercise controllers will only provide players with the information which they are specifically designated to disseminate in their assigned functional area. Players are expected to obtain other necessary information through existing emergency information channels.

- In the event that players do not initiate actions critical to the successful completion of the exercise scenario, controllers will issue contingency messages which direct players to initiate specific actions.

- All exercise messages and communications shall be preceded and followed by the phrase, ***"THIS IS AN EXERCISE."***

6.8 EXERCISE PARTICIPANTS

- **Incident Command Organization (ICO*)***

  - Incident Commander (Shift Superintendent)
  - Fire Command
  - Security Command (WSLLC)

- **<u>ICO Support Personnel (Call out at IC discretion)</u>**

  - ICO Communicator
  - Utilities
  - Radiation Protection
  - Industrial Hygiene

- **<u>Facility/Building(s)</u>**

  - Building 371/374 Complex

- **<u>Emergency Management Organization (EMO*)</u>***

  - Crisis Management Team (CMT)
  - Crisis Support Staff (CSS)
  - Hazards Assessment Center (HAC)
  - Dose Assessment Cell (DAC)
  - Regional Atmospheric Response Center (RARC)

- **Functional Work Centers**

  - Tactical Operations Center (TOC)
  - Occupational Medicine
  - Environmental Protection Management
  - Industrial Hygiene & Safety
  - Engineering Cell

6.8 EXERCISE PARTICIPANTS (continued)

- **Functional Work Centers (continued)**

  - Facilities Maintenance
  - Criticality Safety
  - Radiation Protection
  - Safeguards and Accountability
  - Human Resources
  - Information Technology

- **RFETS Offsite Liaisons**

  - Joint Public Information Center (JIC)
  - Off Site Coordination Center (OCC)
  - North Region Incident Management Group (NRIMG)
  - State of Colorado Accident Assessment Group (AAG)

- **<u>Local Agencies</u>**

  - University Hospital
  - St. Anthony's-North Hospital
  - Broomfield Ambulance Services
  - Coal Creek Volunteer Fire Department

7. EXERCISE CONTROL AND EVALUATION

This section is designed to provide information about the control of exercise activities including:

- How the Exercise Control and Evaluation Organization operates.
- Roles and responsibilities of exercise controllers and evaluators.
- How exercise critiques and findings are to be conducted and documented.

7.1 EXERCISE CONTROL AND EVALUATION ORGANIZATION

The exercise control and evaluation organization consists of the exercise director, exercise evaluator group, control cell, and controllers. Each has specific assignments and roles.

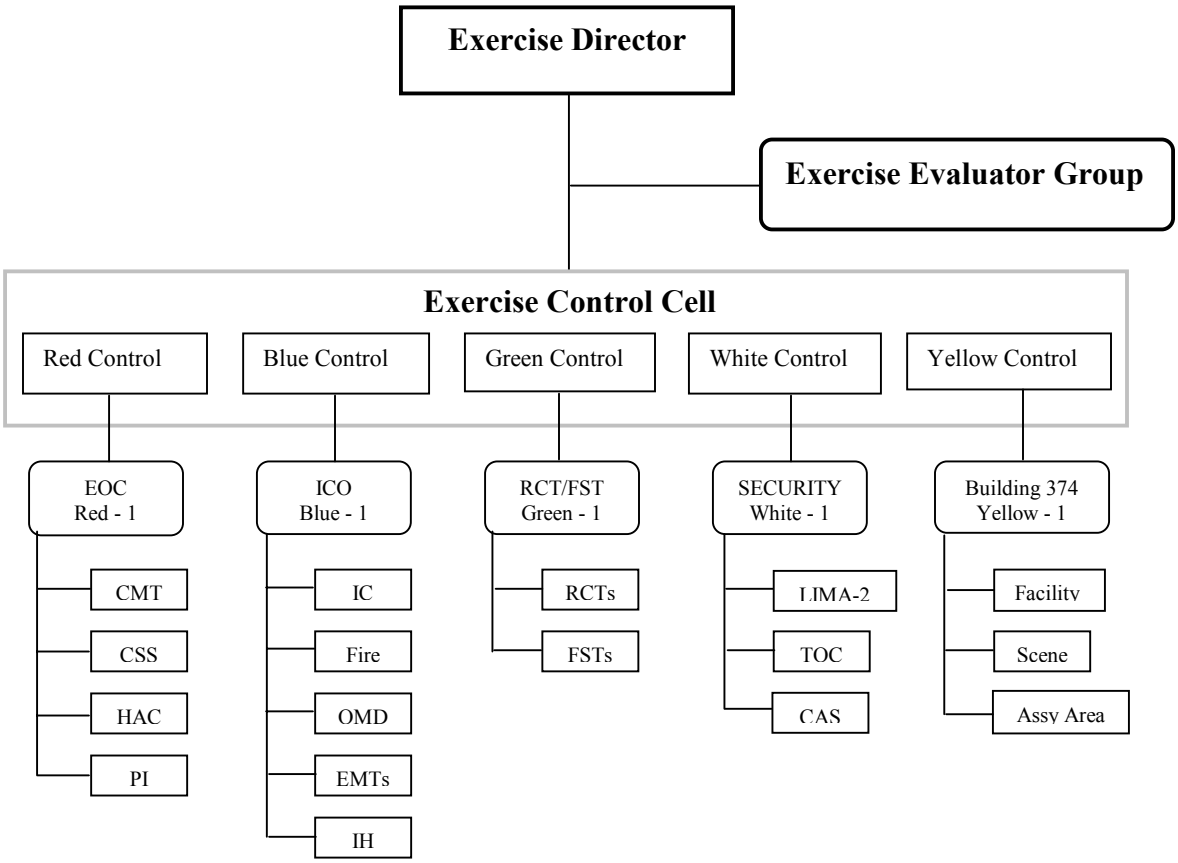


Figure 6 - Exercise Control and Evaluation Organization Chart

7.1 EXERCISE CONTROL AND EVALUATION ORGANIZATION (continued)

- The Exercise Director has primary authority and overall responsibility for the design, development, control, and evaluation of the exercise.

- The control cell is the focal point for collection and dissemination of all information relating to the control of the exercise.

- Controllers provide direction and control of the exercise. They monitor the sequence of events as they unfold, and are responsible for exercise safety within their span of control.

- Lead controllers coordinate the activities of several activities that may involve a number of response locations and/or emergency response functions through a network of subordinate controllers.

- Evaluators are functional area experts who document and evaluate responder performance and the adequacy of facilities and equipment against established evaluation criteria. Evaluators must not interact with players.

- The senior evaluator is responsible for coordination of all evaluation functions including preparation of the exercise evaluation report that identifies findings and specifies the required corrective actions.

- Lead evaluators coordinate the activities of several evaluators that involve a number of response locations and/or emergency functions.

- Responders or role players will comprise the majority of people involved in the exercise. It is their responsibility to demonstrate the actions necessary to mitigate the simulated emergency and the ability to ensure the health and safety of facility personnel, the public, and the environment in accordance with established emergency plans or procedures.

7.1 EXERCISE CONTROL AND EVALUATION ORGANIZATION (continued)

- Observers will be present to observe the exercise for either official or educational purposes. Observers should not interact with responders, contribute information or opinions, or interfere with the exercise in any other way. Observers should direct all questions or comments related to the exercise to the controller for their area or escort, if appropriate.

Control Cell Operations

The control cell collects and disseminates all information relating to the exercise. The individuals that staff the control cell are responsible for ensuring that the exercise stays on track in order to evaluate pre-determined objectives. The control cell may direct exercise contingency message or actions be initiated to speed up or slow down activities to maintain exercise integrity.

A timeline coordinator is responsible for ensuring that the exercise remains on schedule, a key factor for proper attainment of the exercise objectives as detailed in the timeline and master scenario events list. The timeline coordinator also receives status reports from lead controllers and provides this information to the senior controller and exercise director. Each message used to guide exercise activities or the execution of specific emergency response actions exercise must be coordinated with the control cell timeline coordinator.

Actors or role-players may be controllers who simulate members of non-participating organizations, and role-play key individuals such as injured personnel. They may come in face-to-face contact with the responders, functioning semi-independently as next-of-kin or injured personnel. They may also be members of a control cell with telephone communication being the only interaction with responders.

7.2 EXERCISE CONTROLLER GUIDELINES

Controllers provide direction and control of the exercise, monitor the sequence of events as they unfold, and are responsible for exercise safety within their span of control. It is their responsibility to ensure that responders do not respond in a manner that might jeopardize safety and that responders remain focused on exercise play that demonstrates the exercise objectives.

Controller Roles and Responsibilities

Controllers are the only members of the Controller/Evaluator organization whose function allows them to interact with players. Controllers must coordinate all aspects of the exercise with the control cell. Keep them informed of any deviations from the projected time-line. All message inputs must be coordinated with the control cell before injecting them into play. This allows the exercise director to maintain a logical sequence of events in case some aspect of the exercise is going more quickly or more slowly than expected.

Controllers should do the following:

- Review appropriate Emergency Plans, procedures, and documents.
- Review appropriate exercise package materials including the objectives, scenario, messages, Safety and Security Plans, and controller instructions.
- Attend required training and briefing sessions.
- Conduct the exercise by providing applicable scenario information to responders.
- Allow freedom of responder decisions and actions (i.e., free play) to demonstrate exercise objectives and response capabilities.

7.2 EXERCISE CONTROLLER GUIDELINES (continued)

- Inject approved contingency messages or provide instructions, as needed, to keep the exercise on track with the scenario.

- Preclude responder decisions and control actions that may compromise the safety or security of personnel or the facility.

- Refrain from prompting, in any fashion, the decisions or actions of responders.

- Prevent observers and evaluators from interacting with responders.

- Be prepared to suspend exercise activities in the immediate area and to use pre-arranged protocols to terminate an exercise.

- Participate in post-exercise or drill critiques.

- Controllers - are functional area experts assigned to monitor emergency actions and control simulated events in their area of expertise. Their primary function is to keep the events going by making timely input of messages and answering participant's questions.

- Coordination of exercise activities is through the controller radio net with the Lead Controllers. Lead Controllers coordinate through the Exercise Director in the control cell. This is vital for maintaining the accurate and timely flow of information to the control cell and exercise control organization.

- Written messages are used to initiate, modify and/or complete simulated events posed by the scenario. Ensure these messages are issued according to times indicated (" + " denotes anytime at or after the indicated time) or as required to maintain demonstration events as in contingency message (denoted with a message number followed by a "C").

7.2 EXERCISE CONTROLLER GUIDELINES (continued)

- Be at your assigned location at least 15 minutes prior to exercise initiation. Display your exercise identification badge only after the exercise is initiated.

- Ensure that ALL participants' exercise communications include the phrase ***"THIS IS AN EXERCISE."***

- Check operability of radios with your Lead Controller prior to the initiation of the exercise.

- Inject exercise messages on time. Make sure participants understand the content. Contact your Lead Controller or the control cell if you are unsure about the message(s) you are about to issue.

- Allow participants reasonable flexibility to perform their functions, demonstrate their skills, knowledge and initiative.

- Take accurate and detailed notes and use the checklists or forms that are provided.

- The Exercise Director must approve all non-scripted simulations of required actions in response to the scenario events before they are initiated.

- The Lead Controller will hold a critique in-place, immediately after exercise termination using the enabling objectives for that evaluation location.

- Participants/players MAY ask you for information or clarification of scenario data including initial condition of systems; meteorological data, e.g., wind direction, speed, temperature and forecasts; surface and airborne radiation levels at the scene.

7.2 EXERCISE CONTROLLER GUIDELINES (continued)

- Personal protective equipment (PPE) must be used when required by the scenario. (Training assets should be used).

- Rotation or replacement of emergency workers (responders) must be demonstrated when required by scenario events or to alleviate potential heat/cold stress.

- Free Play/Simulations. During an exercise, responders may interject mitigative actions that are not included in, but can be accommodated by, the scenario. In some cases, the scenario timeline will be modified to accommodate this free play. The controller team is responsible for controlling free play.

- Simulations. Controllers either initiate simulations or provide the description of the initial conditions to the responders. Controllers should introduce themselves and evaluators in the area and identify the exercise safety and ground rules. Simulations should be identified to the responders.

Exercise Safety

The control organization plays a crucial role in monitoring the sequence of events, injecting messages, and ensuring the overall safe conduct of the exercise. A controller's primary function is to ensure the safe execution of the exercise. The safety of everyone involved in the exercise, as well as the facility, public, and the environment, is the highest priority. Controllers must know the limitations and precautions for both safety and security for the exercise and for understanding and using this information to ensure that all participants comply accordingly. The exercise Safety Plan and Security Plan provide detailed information.

Actual Emergencies

In the event of an actual emergency, it is the controller's responsibility to suspend all ongoing exercise activities in the immediate area for which he/she is responsible and to contact the Lead Controller. An actual emergency always takes precedence over an exercise. If necessary, the Exercise Director may terminate the exercise so that resources can be devoted to the real emergency.

7.2 EXERCISE CONTROLLER GUIDELINES (continued)

Emergency Notifications

Responders are instructed to contact a controller when an unsafe condition exists or when an actual emergency is identified. If an unidentified or questionable situation arises that may affect the participants, a controller may suspend play and immediately notify the lead controller. The lead controller will notify the control cell exercise play has been suspended at their location, identify why, and then ensure all responders and are informed. Play may be restarted if the situation is resolved. In the case of restart, responders may have to "redo" activities because they are critical for responder performance at other locations.

7.3 EXERCISE EVALUATOR GUIDELINES

An evaluator's role during the exercise is to observe and document exercise activities and conditions. Evaluator observations and findings, both positive and negative, are openly discussed in a formal critique immediately following the exercise. Subsequently, these observations and findings are compiled, validated, and documented in a formal report with recommended corrective actions by the Lead Evaluator.

Evaluator Roles and Responsibilities

Evaluators are assigned specific locations or responder functions to evaluate then document the responders' performance and attend the critique facilitated by the controllers immediately following the exercise during which the responders discuss their performance. The evaluation, documentation, and critique discussion(s) provide important evidence that substantiate exercise findings. The exercise report details the performance and summarizes the overall results of the exercise and provides a comprehensive assessment of the emergency response performance.

7.3 EXERCISE EVALUATOR GUIDELINES (continued)

Evaluators should do the following:

- Review appropriate emergency response plans, procedures, and documents prior to the exercise.
- Review appropriate exercise package materials including the objectives, scenario, messages, Safety and Security Plans, and evaluator instructions.
- Attend required training and briefing sessions.
- Observe the performance of the responders during the exercise and document their actions using evaluation modules or checklists.
- Refrain from interfacing with responders to prevent interrupting or prompting their decisions or actions.
- Evaluate responder performance and the adequacy of procedures, facilities, and equipment based on specific evaluation criteria.
- Evaluators should also note any free play activities in the exercise and the actions taken by the responders. Evaluators need to be aware of what is going on between controllers and responders during free play so they can document the actions.
- Document errors and problem areas in the scenario or conduct of the exercise.
- Present their evaluations and recommendations in a formal critique.

7.4 EXERCISE EVALUATION

- Exercise Objectives. An exercise tests response capabilities according to a set of measurable exercise objectives. Each objective is associated with criteria that must be met to demonstrate that objective.

- Terminal Objective. The terminal objective is the "overall" objective of the *READY - 2000* exercise. It is to "Evaluate the Rocky Flats Environmental Technology Site's ability to protect the health and safety of the workers, the public, and the environment through the demonstration of it's emergency response capability."

- Enabling Objectives. Enabling objectives are broad categories or functions which, given a specific condition, must be performed in order to meet the terminal objective. Each enabling objective may have only one or as many as ten evaluation criteria and each is written in the form of a statement. An example of a *READY - 2000* enabling objective is *"Given emergency events/conditions, perform initial emergency response actions."*

- Evaluation Criteria. Criteria are sub-categories of enabling objectives that are considered part of the enabling objective. Again, each is written in the form of a statement. An example of evaluation criteria that supports the enabling objective above is: *"Shift Superintendents response in accordance with the Site EPLAN and implementing procedures."*

- Evaluation Criterion. Criterion are the actual measurable items or steps used to document whether responders did (YES), did not (NO) or were not observed (N/O) meeting a specific criteria activity. An example of a criterion is *"Did the Shift Superintendent approve initial Operational Emergency notifications?"* Notice this is phrased in the form of a question allowing the evaluator to answer YES, NO, or NOT OBSERVED and provide supporting comments as appropriate.

7.4 EXERCISE EVALUATION (continued)

- Exercise Critiques. A series of formal critiques are conducted after the exercise to provide participants (responders, controllers, and evaluators) the opportunity to identify and discuss findings (both positive and negative).

- Responder critiques occur immediately after the exercise and are facilitated by the controller and evaluator team at each location. Generally, the controllers facilitate the exercise critique while the evaluators take notes. It is important that the responders' input be included so an effective and complete evaluation is accomplished and the significance of responder actions is understood. This is the first and most important step in the validation process. It may be necessary to hold several critiques to include all of the participants. The purpose of these critiques is to provide a forum for constructive feedback on the exercise by the responders. The identification of both positive and negative criticism provides a starting point for improving emergency response capabilities. This is a unique opportunity for responders to discuss their responses and their own perspectives on the activities and events. Controllers may discuss significant observations. Evaluators should remain silent and document the observations and feedback from the responders.

- The critique will be performed while exercise activities are still fresh in the minds of the responders, controllers, and evaluators. Responders may identify any weaknesses, shortfalls, or improvement items. They evaluate their plans, procedures, and task checklists for specific response organization positions, equipment and supplies, facility layout, and performance. Controllers should answer questions on the timeline and scenario. This session can also be used to clarify and verify any information on which there were questions. Responders usually have a basic understanding and evaluation of their job performance during the exercise.

- Controllers and evaluators should not provide the responders with details of any deficiencies or findings during this critique. Controller input should be limited to feed back concerning the actual event scenario, as opposed to the outcome of exercise. Responders should be reminded that all controller/evaluator observations are preliminary and may be revised based on information from other evaluators.

7.5 EXERCISE EVALUATION CRITERIA

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
EO 1.0	***Given initial discovery of emergency events/conditions, recognize the consequences and initiate emergency response actions.***																			
Objective 1.1	**Identify the emergency event.**																			
1.1.1	Did building management use the Building Emergency Response Job Aids located in the BERO? (BERO)						X													
1.1.2	Did building management recognize the event conditions as contained in the EALs? (PRO-T56-EP-04.00)						X													
1.1.3	Did building management correctly identify the emergency event? (EPLAN-99)						X													
1.1.4	Did building management notify the Shift Superintendent, Fire Dispatch, and the Central Alarm Station (CAS) of the alarm condition and the specific parameters associated with the alarm conditions? (BERO)					X	X	X		X	X									
1.1.5	Did building management pass information of known or suspected event parameters to the Shift Superintendent? (PRO-T56-EP-04.00)						X	X		X										
1.1.6	Did Shift Superintendent obtain specific event information when advised of incident conditions? (PRO-T56-EP-04.00)									X										
1.1.7	Did Shift Superintendent compare event information to EALs? (PRO-T56-EP-04.00)									X										
Objective 1.2	**Categorize and classify the emergency event.**																			
1.2.1	Did building management compare event information to EALs? (PRO-T56-EP-04.00; BERO)						X													
1.2.2	Did building management assist in categorization and classification of the event? (PRO-T56-EP-04.00)						X													
1.2.3	Did the Crisis Manager assess recommendations from the HAC Manager regarding emergency classification? (PRO-T56-EP-04.00, ERJA-CMT-1)	X		X																
1.2.4	Did the Crisis Manager implement recommended classification? (ERJA-CMT-1; EPLAN-99)	X																		
1.2.5	Did the Crisis Manager ensure the accuracy of the event classification? (PRO-T56-EP-04.00)	X																		
1.2.6	Did the Crisis Manager approve any upgrades to emergency classification? (PRO-T56-EP-04.00)	X																		

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
1.2.7	Did the Crisis Manager approve termination of emergency event? (PRO-T56-EP-04.00)	X																		
1.2.8	Did the DOE/RFFO Manager concur with termination of emergency event? (PRO-T56-EP-04.00)	X																		
1.2.9	Did the Emergency Director review and validate the declaration of the emergency? (PRO-T56-EP-04.00)		X																	
1.2.10	Did the Emergency Director provide recommendations to the Crisis Manager on classification upgrade? (PRO-T56-EP-04.00)	X	X																	
1.2.11	Did the Emergency Director provide recommendations to the Crisis Manager on event termination? (PRO-T56-EP-04.00)	X	X																	
1.2.12	Did the EOC Manager collect all documentation generated in the classification process? (PRO-T56-EP-04.00)	X	X																	
1.2.13	Did the HAC Manager review and validate the classification of the event (PRO-T56-EP-04.00)			X																
1.2.14	Did the HAC Manager provide recommendations to the Crisis Manager on classification upgrade or termination? (PRO-T56-EP-04.00)	X		X																
1.2.15	Did the Shift Superintendent determine category and classify the event in accordance with EALs? (EPLAN-99, 6.1; PRO-T56-EP-04.00)									X										
1.2.16	Did the Shift Superintendent upgrade the classification of the event? (PRO-T56-EP-04.00)									X										
Objective 1.3 Evacuate affected facilities.																				
1.3.1	Did the IC direct CAS to make initial LS/DW announcements of the situation that included affected areas/buildings, protective actions, ICP location, who should report to the ICP, and access route to the ICP? (EPLAN-99, PRO-642-EP-05.01)						X				X									
1.3.2	Did LS/DW announcements depict the emergency situation? (95-EPIP-0048, EPLAN-99, PRO-642-EP-05.01)										X									
1.3.3	Did LS/DW announcements include specific actions to be taken by Site Personnel? (EPLAN-99, PRO-642-EP-05.01)										X									
1.3.4	Could the evacuation notification be heard by all building occupants? (1-15200-EPIP-12.24)																			
1.3.5	Was time taken to shut down equipment prior to evacuation? (BERO)						X													
1.3.6	Did personnel evacuate the facility? (BERO)						X													
1.3.7	Did all personnel assemble at the primary assembly area? (BERO)						X													
1.3.8	Did RCTs monitor evacuated personnel for radioactive contamination? (RSPs)																			

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
1.3.9	Did RCTs monitor the assembly area for radioactive contamination? (RSPs)													X						
Objective 1.4 Account for personnel																				
1.4.1	Were personnel accountability tag boards available at the primary assembly area or outside of the 12 Rad boundary? (BERO)						X	X		X										
1.4.2	Was the alternate assembly area checked for building personnel? (BMP)						X	X		X										
1.4.3	Was accountability of building personnel completed within 30-45 minutes of building evacuation? (PRO-A44-EP-06.14)						X	X		X										
1.4.4	Was a listing of any missing personnel provided to the IC within 30-45 minutes? (PRO-A44-EP-06.14)						X	X		X										
1.4.5	Were emergency response personnel accounted for? (ERJA-SS-1)						X	X		X										
EO 2.0	***Given emergency events/conditions, make protective action decisions.***																			
Objective 2.1: Determine Protective Actions (PAs).																				
2.1.1	Did the IC direct initial LS/DW announcements of the situation that included affected areas/buildings, protective actions, ICP location, who should report to the ICP, and access route to the ICP? (EPLAN-99, ERJA-SS-1)				X		X				X									
2.1.2	Were initial protective actions based on EALs? (PRO-T56-EP-04.00)						X													
2.1.3	Were LS/DW announcements reviewed for classification prior to release? (PRO-642.-EP-05.01)				X						X									
2.1.4	Did LS/DW announcements communicate the expected protective actions? (EPLAN-99, PRO-642-EP-05.01)				X						X									
2.1.5	Did LS/DW announcements include specific actions to be taken by Site Personnel? (EPLAN-99, ERJA-SS-1)				X						X									
2.1.6	Did LS/DW announcements depict the emergency situation? (95-EPIP-0048)				X						X									
2.1.7	Were follow-up communications provided to the ICO, FWCs, and buffer zone? (EPLAN-99, 1-A34-5500-06.09)										X	X						X		
2.1.8	Did the CM assess recommendations from the HAC Manager on Protective Actions? (EPLAN-99, ERJA-CMT-1)	X		X																
2.1.9	Did the CM implement the HAC Manager's recommended Protective Actions? (ERJA-CMT-1)	X		X																
2.1.10	Did the HAC Manager initiate habitability monitoring of the EOC? (ERJA-HAC-1)			X																

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
2.1.11	Did the RARC provide CAPARS and/or ALOHA outputs to support development of onsite PAs? (ERJA-HAC-4)			X																
2.1.12	Did the Crisis Manager ensure the accuracy of on-site Protective Actions? (PRO-T56-EP-04.00)	X																		
2.1.13	Did the Crisis Manager approve changes to Protective Actions? (PRO-T56-EP-04.00)	X																		
2.1.14	Did the Crisis Manager ensure that on-site Protective Action notifications were accomplished? (PRO-T56-EP-04.00)	X																		
2.1.15	Did the HAC Manager review and validate PAs? (PRO-T56-EP-04.00)			X																
2.1.16	Did the Shift Superintendent direct PAs appropriately? (PRO-T56-EP-04.00)									X										
2.1.17	Did the Shift Superintendent determine appropriate PAs? (PRO-T56-EP-04.00)									X										
Objective 2.2 Shelter, evacuate, or relocate affected personnel.																				
2.2.1	Was personnel monitoring performed? (RSP 7.02)						X							X						
2.2.2	Were area contamination surveys conducted? (RSP 7.02)						X							X						
2.2.3	Were dose surveys conducted? (RSP 7.04)						X							X						
Objective 2.3 Determine Protective Action Recommendations (PARs).																				
2.3.1	Were initial PARs based on EALs? (PRO-T56-EP-04.00)	X		X																
2.3.2	Did the Crisis Manager assess recommendations from the HAC Manager on Protective Action Recommendations (PARs)? (EPLAN-99; ERJA-CMT-1)	X		X																
2.3.3	Did the Crisis Manager implement the HAC Manager's recommended PARs? (ERJA-CMT-1; EPLAN-99)	X		X																
2.3.4	Did the Crisis Manager approve the downgrade of a PAR with the concurrence of the DOE/RFFO Manager? (ERJA-CMT-1)	X																		
2.3.5	Did the RARC provide CAPARS and/or ALOHA outputs to support development of offsite PARs? (ERJA-HAC-4)			X																
2.3.6	Did the Crisis Manager ensure the accuracy of off-site PARs? (PRO-T56-EP-04.00)	X																		
2.3.7	Did the Crisis Manager approve any changes to PARs? (PRO-T56-EP-04.00)	X																		
2.3.8	Did the HAC Manager review and validate PARs? (PRO-T56-EP-04.00)			X																

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
2.3.9	Did the Shift Superintendent direct PARs to be given to off-site authorities? (PRO-T56-EP-04.00)																			
2.3.10	Did the Shift Superintendent determine the appropriate PARs for the event? (PRO-T56-EP-04.00)									X										
2.3.11	Did the Shift Superintendent select the appropriate ERPAs to which the PARs apply? (PRO-T56-EP-04.00)																			
EO 3.0	***Given declaration of an operational emergency, make notifications.***																			
Objective 3.1	**Notify off-site authorities.**																			
3.1.1	Did the Shift Superintendent provide emergency classification level, PAs, and PARs to the Fire Dispatcher and CAS and direct that appropriate notifications be made? (PRO-T56-EP-04.00)					X				X	X									
3.1.2	Did the SS approve initial Operational Emergency notifications? (PRO-642-EP-05.01)																			
3.1.3	Did the Crisis Manager ensure that off-site notifications were accomplished? (PRO-T56-EP-04.00)	X																		
3.1.4	Was notification to off-site authorities accomplished within 15 minutes of emergency declaration or changes to the classification? (PRO-T56-EP-04.00)					X														
3.1.5	Was notification to off-site authorities accomplished within 15 minutes of changes to PARs? (PRO-T56-EP-04.00)					X														
Objective 3.2	**Assemble RFETS Emergency Response Organization (ERO).**																			
3.2.1	Did the Shift Superintendent direct that the initial LS/DW announcement of the emergency event be made? (PRO-642-EP-05.01)									X										
3.2.2	Did the Shift Superintendent initiate emergency notification? (EPLAN-99, PRO-642-EP-05.01)									X										
3.2.3	Did the Shift Superintendent direct the Fire Dispatcher to activate the ERO? (PRO-642-EP-05.01)					X				X										
3.2.4	Did the Fire Dispatcher activate the appropriate notification of ERO components by initiating DERS? (PRO-642-EP-05.01)					X														
3.2.5	Did the CAS receive the initial information? (EPLAN-99, PRO-642-EP-05.01)										X									
3.2.6	Did the CAS contact LIMA-2 with directions to report to the ICP? (WSLLC Procedures)										X		X							
3.2.7	Did LIMA-2 respond to the ICP? (WSLLC Procedures)							X				X	X							
3.2.8	Were hazards considered in establishment of the ICP? (ERJA-SS-1)							X		X						X				
3.2.9	Were ICO briefings conducted? (EPLAN-99, ERJA-SS-1)							X		X						X				

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
3.2.10	Were emergency response personnel accounted for? (ERJA-SS-1)							X		X						X				
3.2.11	Did the SS request an IC communicator (ECHO-2)? (ERJA-SS-1)							X		X										
3.2.12	Did the ICO communicate with the EOC? (EPLAN-99, ERJA-SS-1)	X	X					X		X										
3.2.13	Did the IC develop an initial plan of action to minimize and mitigate any adverse impacts to human health or the environment? (ERJA-SS-1)							X		X										
3.2.14	Did Radiological Control Supervisor/Managers assemble personnel and equipment for emergency response? (EPLAN-99)													X						
3.2.15	Did Rad Ops respond to the ICP? (EPLAN-99, ERJA-SS-1)													X						
3.2.16	Did a Radiological Control Supervisor/Manager report to the IC to establish a Rad Ops Support Center, and provide control and direction to the Rad Ops organization? (EPLAN-99)													X						
3.2.17	Did the WSLLC Security Advisor receive timely notification? (ERJA-CMT-9)	X																		
3.2.18	Did the OMD staff up emergency duty stations? (OMD Procedures)																X			
3.2.19	Did OMD initiate a recall of personnel to support the emergency? (OMD Procedures)																X			
3.2.20	Did the IC direct initial assessment actions as soon as possible using available people and resources at the scene? (EPLAN-99)							X		X						X				
3.2.21	Was fire department order of response correct? (3-FD-SOI-1066, 3-FD-SOI-214)								X											
3.2.22	Were sector assignments implemented based on the incident? (3-FD-SOI-1066)								X											
3.2.23	Was mutual aid requested based on the initial size-up? (3-FD-SOI-206)								X											
3.2.24	Did the fire department consider hazards in establishment of the ICP? (3-FD-SOI-1008)								X											
3.2.25	Was an ICP established at an appropriate distance and upwind of the scene? (EPLAN-99, ERJA-SS-1)							X	X	X						X				
3.2.26	Did the fire department establish control zones (Red, Yellow, and Green)? (3-FD-SOI-1008)								X											
3.2.27	Did IH respond to the ICP? (EPLAN-99, Sec. 2; ERJA-SS-1; IH Procedure)															X				
3.2.28	Did the IC develop an initial plan of action to minimize and mitigate any adverse impacts to human health or the environment? (ERJA-SS-1)							X	X	X						X				
EO 4.0	***Given declaration of an operational emergency, establish command, control, and communications.B155***																			
Objective 4.1	**Transfer emergency response command and control functions from the facility manager to the Incident Commander.**																			

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
4.1.1	Was there a formal transfer of responsibilities, command and control of site-wide response, categorization and classification, notification, PAs, and PARs between the Facility Manager and the Fire Department? (EPLAN-99)						X	X	X											
4.1.2	Was there a formal transfer of responsibilities, command and control of site-wide response, categorization and classification, notification, PAs, and PARs between the Fire Department and Shift Superintendent? (EPLAN-99)							X	X	X										
4.1.3	Did the Shift Superintendent receive a briefing by building management or their designee prior to the assumption of incident command responsibilities? (EPLAN-99)						X	X		X										
Objective 4.2	**Transfer overall emergency response command and control functions from the Incident Commander to the Crisis Manager.**																			
4.2.1	Did the Shift Superintendent (IC) assume the responsibilities of the Crisis Manager until relieved by a designated CM? (PRO-T56-EP-04.00)									X										
4.2.2	Did the Incident Commander or designee brief the Crisis Manager prior to the transfer of responsibilities? (EPLAN-99)	X								X										
4.2.3	Did the Incident Commander formally transfer the overall responsibility for site-wide emergency response activities to the Crisis Manager? (EPLAN-99)	X								X										
Objective 4.3	**Communicate event information within and between emergency response organization components.**																			
4.3.1	Did the IC direct initial LS/DW announcements of the situation that included affected areas/buildings, protective actions, ICP location, who should report to the ICP, and access route to the ICP? (PRO-642-EP-05.01)							X												
4.3.2	Did the ICO staff share known information with the IC? (ICO-ERJAs)							X		X						X				
4.3.3	Were communications established with, and an on-scene status update obtained from the WSLLC Representative? (ERJA-CMT-9)	X																		
4.3.4	Did the OCC keep the Site informed of offsite response to the Operational Emergency? (EPLAN-99)	X																	X	

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
4.3.5	Did the OCC Manager establish communications with the DOE/RFFO Communicator/Coordinator in the CMT? (3-A13-5500-01.56)	X																	X	
4.3.6	Did the OCC Manager brief the SEOC team on the incident? (3-A13-5500-01.56)																		X	
4.3.7	Did the DOE/RFFO Offsite Communicator/Coordinator keep the OCC informed of onsite response to the operational emergency? (EPLAN-99; ERJA-CMT-3)	X																	X	
4.3.8	Did the OMD staff communicate patient information and medical conditions to the CSS Communicator? (PRO-A13-EP-01.56)		X														X			
4.3.9	Did the WSLLC Security Advisor receive notification within 30 minutes of the start of the exercise? (ERJA-CMT-9)	X																		
4.3.10	Did LIMA-2 establish access control to the ICP and the accident scene? (EPLAN-99)											X	X							
4.3.11	Did SPOs acknowledge EMRESP badge designations and facilitate emergency responder access to the Incident Command Post? (EPLAN-99)											X	X							
EO 5.0	***Given declaration of an operational emergency, establish offsite liaison.***																			
Objective 5.1	**Establish offsite liaison.**																			
5.1.1	Was the decision to call for mutual aid support made in a timely manner once all available resources were committed? (3-FD-SOI-225, 3-FD-SOI-217, 3-FD-SOI-401)								X											
5.1.2	Was the request for mutual aid made in a timely manner? (3-FD-SOI-225, 3-FD-SOI-217, 3-FD-SOI-401)					X			X											
5.1.3	Was confirmation of mutual aid availability provided back to the Incident Commander? (3-FD-SOI-225, 3-FD-SOI-217, 3-FD-SOI-401)								X											
5.1.4	Was a staging area established for the mutual aid agencies? (3-FD-SOI-401)								X											
5.1.5	Did the ICP Representative report to JeffCo ICO? (PRO-A13-EP-01.56)																		X	
5.1.6	Did the OCC Manager report to the SEOC? (PRO-A13-EP-01.56)																		X	

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
EO 6.0	***Given the release of hazardous materials, monitor and control emergency worker exposure.***																			
Objective 6.1	**Manage contaminated and/or exposed personnel.**																			
6.1.1	Did an RCT report immediately to the OMD upon notification of an emergency involving actual (or potential for) radioactive contamination of the individuals involved?(RSPs)													X						
6.1.2	Did RCTs provide technical advice on contamination control? (RSPs)													X						
6.1.3	Did RCTs post occupational medicine? (RSPs)													X			X			
6.1.4	Did RCTs monitor evacuated personnel and the assembly area for radioactive contamination? (RSPs)													X						
6.1.5	Were area contamination surveys conducted? (RSPs)													X						
6.1.6	Were dose surveys conducted? (RSPs)													X						
6.1.7	Was the assembly area surveyed for background radiation levels greater than 1 mR/hr p+B197rior to starting the personnel surveys? (RSPs)													X						
6.1.8	Were personnel with surface contamination or with dosimeter scan readings greater than 1 mR/hr segregated from other personnel? (RSPs)													X						
6.1.9	Did emergency responders use proper PPE? (RSPs)								X					X		X				
6.1.10	Did Rad Ops determine the level of skin contamination? (RSPs)													X						
6.1.11	Was contamination above established limits and decontamination conducted according to established procedures/protocols? (RSPs)															X	X			
6.1.12	Were nasal and/or mouth swab samples taken? (RSPs)																X			
Objective 6.2	**Establish controls to prevent the spread of hazardous materials.**																			
6.2.1	Did a Radiological Control Supervisor/Manager report to the IC to establish a Rad Ops Support Center, and provide control and direction to the Rad Ops organization? (EPLAN-99)													X						
6.2.2	Did Radiological Control Supervisor/Managers assemble personnel and equipment for emergency response? (EPLAN-99)													X						
6.2.3	Did Radiological Operations properly post radiological protection requirements? (RSPs)													X						
6.2.4	Was personnel monitoring performed? (RSPs)													X						
6.2.5	Were area contamination surveys conducted? (RSPs)													X						
6.2.6	Were dose surveys conducted? (RSPs)													X						
6.2.7	Were nasal/mouth swab samples taken? (RSPs)													X			X			
6.2.8	Were wounds and skin/hair contamination samples taken? (RSPs)													X						
6.2.9	Was portable low volume air sampling performed? (RSPs)													X						

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
6.2.10	Was contamination above established limits and decontamination conducted according to established procedures/protocols? (RSPs)													X		X				
6.2.11	Were Fire Department personnel checked for contamination and decontaminated before being released form the scene? (RSPs)								X							X				
6.2.12	Did Fire Department treatment personnel use PPE? (FD SOP; HSPs)								X							X				
6.2.13	Was equipment decontaminated? (3-FD-SOI-1014)								X							X				
6.2.14	Were decontamination procedures implemented for contaminated areas and equipment? (RSPs)								X							X				
EO 7.0	***Given multiple casualties, provide emergency medical treatment.***																			
Objective 7.1	**Perform emergency medical care.**																			
7.1.1	Did the OMD staff communicate patient information and medical conditions to the CSS Communicator? (OMD FWC ERJA)																X			
7.1.2	Were emergency treatment stations established in Building 122? (OMD FWC-ERJA)																X			
7.1.3	Did the OMD staff use proper PPE? (OMD FWC-ERJA)																X			
7.1.4	Did OMD staff emergency care positions? (OMD FWC-ERJA; OMD Procedure)																X			
7.1.5	Did an RCT report immediately to the OMD upon notification of an emergency involving actual (or potential for) radioactive contamination of the individuals involved? (RSPs)																X			
7.1.6	Did RCTs properly prepare the medical decontamination trailer? (RSPs)																X			
7.1.7	Did Rad Ops determine the level of skin contamination? (RSPs)																X			
7.1.8	Did RCTs provide technical advice on contamination control? (RSPs)																X			
7.1.9	Did RCTs post occupational medicine? (RSPs)																X			
7.1.10	Was Rad Ops support provided to the offsite medical facility to coordinate radiological control efforts with the facility? (RSPs)																X			
7.1.11	Did EMTs provide initial emergency response and bring injured employees to OMD for further evaluation and treatment, unless the patient's injuries were of a serious nature or life threatening? (OMD Procedures)								X								X			
7.1.12	Did EMTs request medical transport services? (OMD Procedures)								X								X			
7.1.13	Did EMTs evaluate and transport victims with major injuries to offsite locations for definitive care? (OMD Procedures)								X								X			
7.1.14	Was the on-call physician contacted when offsite treatment was expected? (OMD Procedures)																X			
EO 8.0	***Given declaration of an operational emergency, keep the site populace and public informed of emergency response actions.***																			

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
Objective 8.1 Communicate Protective Actions (PAs).																				
8.1.1	Did LS/DW announcements communicate changes to Protective Actions? (EPLAN-99,; PRO-642-EP-05.01)				X															
8.1.2	Were follow-up communications on changes to Protective Actions provided to the ICO, FWCs, and buffer zone? (EPLAN-99)																	X		
Objective 8.2 Complete public information activities.																				
8.2.1	Did the PI Team prepare media releases? (95-EPIP-0048)				X															
8.2.2	Did the PI Manager approve media releases? (ERJA-CMT-8; 95-EPIP-0048)	X			X															
8.2.3	Did the JIC Team report to the SEOC? (EPLAN-99, 95-EPIP-0048)				X															
8.2.4	Were Emergency Public Information products provided to Joint Public Information Center? (95-EPIP-0048)				X															
8.2.5	Were media releases reviewed for classification prior to release? (ERJA-CMT-8; 95-EPIP-0048)				X															
8.2.6	Were media releases accurate? (95-EPIP-0048)				X															
8.2.7	Were media releases timely? (95-EPIP-0048)				X															
8.2.8	Did the Crisis Manager receive briefings on public information, media inquires received, and VIP inquiries received? (95-EPIP-0048)	X			X															
EO 9.0	***Given emergency events/conditions, perform consequence assessments.***																			
Objective 9.1 Complete consequence assessment activities.																				
9.1.1	Did the RARC provide CAPARS and/or ALOHA outputs? (EPLAN-99, ERJA-HAC-4)			X																
9.1.2	Did the RARC provide CAPARS and/or ALOHA outputs to support development of onsite PAs and offsite PARs? (ERJA-HAC-04)			X																
9.1.3	Did RARC provide weather forecasts in support of emergency response operations? (EPLAN-99, ERJA-HAC-4)			X																
9.1.4	Was CAPARS and/or ALOHA used to provide the EMO with data projections for recommending changes in PAs/PARs? (EPLAN-99)			X																
9.1.5	Was input from the IC and RCTs/IH/FSTs on-scene provided to the HAC for analysis and a comparison performed with dose/atmospheric dispersion models? (EPLAN-99; ERJA-HAC-2)			X				X		X						X				
9.1.6	Was CAPARS and/or ALOHA used by the HAC to predict plume path distance and time? (EPLAN-99)			X																
9.1.7	Was CAPARS and/or ALOHA used to provide the EMO with data projections for recommending changes in classification? (EPLAN-99)			X																
9.1.8	Did the HAC Manager review dispersion model runs for validating the			X																

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
	classification level, PAs, and PARs? (PRO-T56-EP-04.00)																			
9.1.9	Did the HAC Manager provide recommendations to the Crisis Manager regarding classification level, PAs, and PARs? (PRO-T56-EP-04.00)	X		X																
9.1.10	Did the RARC representative respond to provide consequence assessment support? (By contract)			X																
Objective 9.2 Perform field monitoring team activities.																				
9.2.1	Was the anticipated hazardous material source term considered prior to deployment of field monitoring team(s)? (1-A26-5500-08.01)			X											X					
9.2.2	Did the Crisis Manager or Incident Commander approve exposures known or anticipated to be greater than DOE Limits? (1-A26-5500-08.01)	X						X		X					X	X				
9.2.3	Did field monitoring team members receive a briefing from the IC or designee before deployment? (1-A26-5500-08.01)							X		X					X	X				
9.2.4	Did the Crisis Manager or Incident Commander approve entries to unknown radiation fields or chemical atmospheres? (1-A26-5500-08.01)	X						X		X					X	X				
9.2.5	Did field monitoring team(s) provide a debriefing to the IC or designee after returning from the field? (1-A26-5500-08.01)							X		X					X	X				
9.2.6	Did the Radiological FST Coordinator in the HAC issue activation instructions to activate the team (2-A15-5500-01.66)			X											X					
9.2.7	Did FST members report to the FST assembly location on a timely basis? (BMP)														X					
9.2.8	Did FST personnel perform instrument checks prior to departing for the ICP? (2-A15-5500-01.66, Inst. 8)														X					
9.2.9	Did FST personnel accomplish PPE inventory and inspection prior to departing for the ICP? (2-A15-5500-01.66, Inst. 8)														X					
9.2.10	Did the FST report to the ICO prior to entry of the emergency scene? (ERJA-SS-1)							X		X					X	X				
9.2.11	Was the FST aware of the location of the 12 Rad line for the facility? (BMP)														X					
9.2.12	Did the FST team leader establish radio contact with the FST Coordinator? (2-A15-5500-01.66, Inst. 10)			X											X					
9.2.13	Did the FST Coordinator provide clear direction for field sampling locations to the FST? (2-A15-5500-01.66, Inst. 11)			X											X					

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
9.2.14	Did the FST provide sample results to the FST Coordinator in a clear and understandable manner (2-A15-5500-01.66, Inst. 12)			X											X					
9.2.15	Did the FST Team Leader log the sample data and complete the appropriate Worksheet? (2-A15-5500-01.66, Inst.11)														X					
9.2.16	Did FST members periodically look at their direct reading dosimeters while sampling inside the emergency? (2-A15-5500-01.66, Inst.13)														X					
9.2.17	Was a plume search accomplished using the FST vehicle? (2-A15-5500-01.66, Inst. 13)														X					
EO 10.0 Given emergency events/conditions, demonstrate recovery.																				
Objective 10.1	**Complete recovery planning.**																			
10.1.1	Was a Recovery Team designated from required functional areas? (ERJA-CMT-1)	X																		
10.1.2	Did the Crisis Manager appoint the Recovery Manager? (EPLAN-99, ERJA-CMT-1)	X																		
10.1.3	Did the Emergency Director coordinate development of the recovery plan outline? (ERJA-CSS-1)		X																	
10.1.4	Was the recovery plan outline approved by the CM with concurrence by the DOE/RFFO Manager? (ERJA-CMT-10)	X																		
10.1.5	Did the Crisis Manager approve exposures known or anticipated to be greater than the DOE Radiological Emergency Dose Limit? (ERJA-CMT-1)	X																		
10.1.6	Did recovery team members receive a briefing from the IC or designee before reentering the affected building or area? (ERJA-CMT-1)							X		X						X				
10.1.7	Did the Crisis Manager or Incident Commander approve all entries for unknown radiation fields/atmospheres? (ERJA-CMT-1)	X						X		X						X				
10.1.8	Did recovery team provide a debriefing to the IC or designee after reentering the affected building or area? (ERJA-CMT-1)							X		X						X				
Objective 10.2	**Complete emergency re-entry.**																			
10.2.1	Did emergency reentry planning consider identification of radiation and/or chemical source term? (1-A26-5500-08.01)	X						X		X						X				
10.2.2	Did emergency reentry planning consider life saving? (1-A26-5500-08.01)	X						X		X						X				

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
10.2.3	Did the Crisis Manager approve exposures known or anticipated to be greater than the DOE Radiological Emergency Dose Limit? (EPLAN-99, 1-A26-5500-08.01)	X																		
10.2.4	Did reentry team members receive a briefing from the IC or designee before reentering the affected building or area? (EPLAN-99, 1-A26-5500-08.01)							X		X						X				
10.2.5	Did the Crisis Manager or Incident Commander approve all entries for unknown radiation fields or chemical atmospheres?(EPLAN-99, 1-A26-5500-08.01; ERJA-CMT-1; ERJA-SS-1)	X						X		X						X				
10.2.6	Did reentry team provide a debriefing to the IC or designee after reentering the affected building or area? (ERJA-SS-1; 1-A26-5500-08.01)							X		X						X				
10.2.7	Did emergency reentry planning consider identification of radiation/chemical source term? (1-A26-5500-08.01)	X						X		X						X				
10.2.8	Did the HAC Manager verify and confirm adequate levels of individual protective clothing/equipment? (ERJA-HAC-01, 1-A26-500-08.01)	X		X																
10.2.9	Did Radiological Control Supervisor/Manager identify respiratory protection requirements? (RSPs, 1-A26-5500-08.01)													X						
10.2.10	Did Fire Department treatment personnel use PPE? (1-A26-5500-08.01)							X								X				
10.2.11	Did emergency workers entering the scene wear PPE? (HSPs, 1-A26-5500-08.01)							X						X		X				
EO 11.0	***Establish effective control and evaluation of the simulated emergency event.***																			
11.1.1	Did the controller organization ensure the safe and secure conduct of the participant's actions? (EMG)	X	X					X	X	X				X			X			
11.1.2	Did the controller organization provide timely event information to participants? (EMG)	X	X					X	X	X				X			X			
11.1.3	Did the controller organization prohibit interference by non-participants, evaluators, and observers with participants? (EMG)	X	X					X	X	X				X			X			
11.1.4	Did the role players accurately depict the proper simulation(s) for the participants? (EMG)	X	X					X	X	X				X			X			
11.1.5	Did the control cell staff provide communications with participants that was consistent with the needs presented by the scenario? (EMG)	X	X					X	X	X				X			X			
11.1.6	Did the controller organization provide information as exercise participants earned the information? (EMG)	X	X					X	X	X				X			X			
11.1.7	Did the controller organization use proper radio communications	X	X					X	X	X				X			X			

	Exercise Objectives & Evaluation Criteria Matrix	Crisis Mgmt Team	Crisis Support Staff	HAC/DAC	Public Info & JIC	Fire Dispatch	Facility Mgr/CCA	On Scene	Fire Department	Shift Superintendent	CAS	TOC	LIMA-2	Rad Support	F.S.T.	I. H.	Occ. Med.	F. W. C.	Offsite Interface	Control Cell
	protocol? (EMG)																			
11.1.8	Was the controller organization adequately staffed and positioned for controlling and conducting the exercise? (EMG)	X	X					X	X	X				X			X			
11.1.9	Did the controller organization conduct the exercise in accordance with the exercise package? (EMG)	X	X					X	X	X				X			X			
11.1.1	Did the controller organization permit exercise participant free-play? (EMG)	X	X					X	X	X				X			X			
11.1.11	Was the evaluator organization adequately staffed and positioned for evaluating the exercise? (EMG)	X	X					X	X	X				X			X			
11.1.12	Did the evaluator organization display an understanding of the boundaries associated with evaluating the exercise against the stated objectives? (EMG)	X	X					X	X	X				X			X			
11.1.13	Was a post-exercise critique conducted to solicit feedback from the exercise participants? (EMG)	X	X					X	X	X				X			X			
11.1.14	Was a formal critique process conducted by the controller and evaluator organizations? (EMG)	X	X					X	X	X				X			X			

7.6 EXERCISE DOCUMENTATION

- Each evaluator will be provided with a complete checklist for their specific area of evaluation. In addition, they will have a copy of the Master Scenario Events List (MSEL) to allow them to see how events unfolding at their location are being driven by, or reacting to, events at other locations. The MSEL is an exact reflection of controller messages and also contain scheduled inject time and how exercise developers feel responders will react to the inputs. Evaluators should document responder reactions to each scenario event and also note how the set up and conduct of the exercise impacts on responder activities.

- Evaluators must be familiar with the exercise report format since they will be responsible for writing the report. This will allow them to take notes that can be easily transcribed into the final report.

7.7 EXERCISE SUSPENSION OR TERMINATION

Exercise activities may be suspended at any time by the Exercise Director or Controllers due to the occurrence of actual emergencies or alarms; potential or actual violations of safety or security requirements; or other events or conditions such as inclement weather. Otherwise, exercise play and activities will continue against the scenario and master scenario events list as planned until the Exercise Director issues a termination notification. This normally occurs when all exercise objectives have been successfully completed. Once the Exercise Director has issued a suspension or termination notification, immediately pass the word to all participants to stop all ongoing exercise activities. When exercise activities have been suspended for any reason, play will resume at the point in the timeline where the exercise was suspended.

7.8 EXERCISE OBSERVER GUIDELINES

This section provides baseline guidance to Exercise Observers. These are personnel who are allowed escorted or unescorted access to the areas designated for exercise activities and play. Observers are not responsible for participating in, controlling or evaluating the exercise.

- Observers will be required to attend the necessary briefings and conform to all safety and security requirements.
- All observers shall be identified by an appropriate form of identification and escorted, if necessary.
- Observers **SHALL NOT** interface with participants, and understand that those personnel have been instructed that they are not obligated to respond to Observers.
- Questions from Observers shall be directed to Controllers.
- Observers are exempt from exercise simulated hazards the same as the Controllers.
- Observers shall remain clear of response activities and not get in the way of the participants. In some cases, a designated Observer area will be established and an individual will be available to brief on events as they occur.
- Observers may attend the Participant critiques.

7.9 EXERCISE CONTROLLER AND EVALUATOR ROSTER

FUNCTIONAL AREA	ASSIGNED	RADIO NET	RADIO CALL SIGN
Exercise Director	M. Bonta	N/A	
Senior Exercise Controller	J. Powers	N/A	
Exercise Control Center Manager	J. Everitt	N/A	
EOC Control	K. Germolus	EXCON 1	Red Control
ICP Control	N. Freeman	EXCON 2	Blue Control
Rad Control	T. Wesley	EXCON 3	Green Control
Security Control	B. Brandt	EXCON 4	White Control
Building Control	J. Flora	EXCON 5	Yellow Control
Exercise Support-HQ DOE/City/County/State	A. Aldrich	N/A	N/A
Exercise Support-HQ DOE/City/County/State	C. Sauerland	N/A	N/A
Exercise Support-HQ DOE/City/County/State	J Horst	N/A	
Exercise Support-HQ DOE/City/County/State	K. Harness	N/A	N/A
Exercise Support – Media Inquiries	S. Budden	N/A	
Exercise Support – Media Inquiries	C. Powers	N/A	
Exercise Support Chronology/Recorder	N. Marquardt	N/A	N/A
Exercise Support – Admin Assistant/Runner	K. Stiner	N/A	N/A
Exercise Support – Coordinator	B. Grant	N/A	N/A

FUNCTIONAL AREA	CONTROLLER		RADIO CALL SIGN	EVALUATOR
EMERGENCY OPNS CENTER			**EXCON 1**	
Crisis Management Room	#1	R. Burns - Lead	Red - 1	R. Burns - Lead
Crisis Support Staff	#2	P. Melberg	N/A	P. Melberg
Hazards Assessment Center	#3	R. Beaulieu	Red – 2	J. Mahaffey
Dose Assessment Center	#4	L. Blumstein	N/A	L. Blumstein
Public Information	#5	M. Wright	N/A	M. Wright
Fire Dispatch	#6	K. Hall	Red – 3	K. Hall
Switchboard Operator	#7	J. Jensen	N/a	J. Jensen
INCIDENT COMMAND			**EXCON 2**	
Incident Command Post	#8	T. Gray- Lead	Blue – 1	B. Kopplin -Lead
Shift Superintendent ICP	#9	D. Ferrera	Blue – 2	D. Ferrera
Controller Support - ICP	#10	F. Farinola	Blue – 3	N/A
Controller Support – EMS Sector	#11	D. McCoy	Blue – 4	D. McCoy
Controller Support – EMS Sector	#12	J. McInerney	N/A	J. McInerney
Controller Support – Fire Department/ICP	#13	J. Medina	Blue – 5	B. Kopplin
Exercise Safety Officer – ICP	#14	J. Jackson-Bass	Blue - 6	J. Jackson-Bass
BUILDING 374			**EXCON 5**	
Facility Manager/CCA	#15	W. Speigel - Lead	Yellow – 1	W. Speigel - Lead
Incident Scene	#16	R. D. Campbell	Yellow – 2	N/A
Incident Scene	#17	R. Bowen	Yellow – 3	T. Morgan
Assembly Area	#18	C. McGaughey	Yellow – 4	C. McGaughey
Fire Department/Interior Sector	#19	G. Ferrera	Blue – 7	J. Gamby
Fire Department/Exterior Sector	#20	L. Young	Blue - 8	M. Knight

7.9 EXERCISE CONTROLLER AND EVALUATOR ROSTER (continued)

FUNCTIONAL AREA	CONTROLLER		RADIO CALL SIGN	EVALUATOR
INDUSTRIAL HYGIENE			**EXCON 2**	
Lead Controller - ICP	#21	T. Medina	Blue – 9	T. Medina
IH FWC	#22	L. Arndt	N/A	L. Arndt
IH FST	#23	D. Herrick	Blue - 10	D. Herrick
RADIOLOGICAL SUPPORT			**EXCON 3**	
Radiological Operations –ICP	#24	F. Fredricks (Lead)	Green – 1	T. Melberg
Radiological Operations – On Scene	#25	J. Fox	Green – 2	J. Fox
Radiological Operations – North Sector	#26	D. Parsons	Green – 3	D. Parsons
Radiological Operations – South Sector	#27	C. Sawyer	Green – 4	C. Sawyer
Radiological Operations – East Sector	#28	D. Davidson	Green – 5	D. Davidson
Radiological Operations – West Sector	#29	R. Morris	Green – 6	R. Morris
Radiological Operations – FST 1	#30	H. Reynolds	Green – 7	H. Reynolds
Radiological Operations – FST 2	#31	B. Estabrooks	Green - 8	B. Estabrooks
Radiological Engineering FWC	#32	M. Parker	N/A	M. Parker
Decontamination Trailer – Occ. Med.	#33	M. Richards	Green - 9	M. Richards
Radiological Operations - Offsite Hospital University	#34	C. Bean	N/A	C. Bean
Radiological Operations – Offsite Hospital - St. Anthony's North	#35	A. Light	N/A	A. Light
SECURITY			**EXCON 4**	
LIMA-2	#36	K. Ondracek	White-1	K. Ondracek
TOC	#37	D. Cutlip	White-2	D. Cutlip
CAS	#38	B. Scharmer	White-3	B. Scharmer
PUBLIC INFORMATION				
JIC	#39	D. Connors		D. Connors
OCC	#40	N/A		N/A
FUNCTIONAL WORK CENTERS			**EXCON 2/ Phone #**	
Environmental Protection	#41	K. North	9876	K. North
Human Resources	#42	T. Berumen	2047	T. Berumen
Occupational Medicine	#43	P. Spetz	Blue-11 8378/6371	P. Spetz
Information Technology	#44	T. Villani	7740	T. Villani
Engineering	#45	G. Rappenecker	5714	G. Rappenecker
Facilities Maintenance	#46	J. Thompson	2372	J. Thompson
Safeguards and Accountability	#47	M. Rodcay	6176	M. Rodcay
Criticality Engineering	#48	J. Chandler	6732	J. Chandler

7.9 EXERCISE CONTROLLER AND EVALUATOR ROSTER (continued)

ON-SCENE EVENT PLAYERS	ROLE PLAYER
Worker #1 Bldg 374, Room 3813	D. Akin
Worker #2 Bldg 374, Room 3813	A Macleod
Worker #3 Bldg 374, Room 3809	V. Mackes
Worker #4 Bldg 374, near Room 3813	M. Wiebe
Worker #5 Bldg 374, near Room 3813	J. McCabe
Worker #6 Bldg 374 Assembly Area	B. Erwin
*Worker #2A University Hospital	J. Rau
*Worker #3A University Hospital	G. Sands
*Worker #4A University Hospital	J. Heil
*Worker #5A University Hospital	D. Clausen
FUNCTIONAL AREAS	**DOE EVALUATOR**
Building 374	T. Denney
Building 374	E. Westbrook
Crisis Management Team	D. Faulkner
Field Sampling Team	S. Ludwig
Hazards Assessment Center	T. Foppe
Incident Command Post	G. Morgan
Incident Command Post	D. Weems
Occupational Medicine	B. Wallin
State EOC	S. Surovchak
TBD	M. Maline
OBSERVERS	**EOC ACCESS**
B. Card – President, K-H LLC	YES
N. Tuor, VP & PM RISS	YES
B. Mazurowski - DOE RFFO Manager	YES
P. Golan – DOE RFFO Deputy Manager	YES
Don Owen - DNFSB Evaluator	YES
David Grover – DNFSB Evaluator	YES
Gary Goldberg - DOE HQ	YES

*Pre-staged at University Hospital representing Workers 2-5

8. PUBLIC INFORMATION AND MEDIA PLAN

This section provides a Public Information and Media Plan to facilitate and support the conduct of *READY - 2000*.

Scope

This plan establishes the framework for coordinated, efficient media relations in support of the (specify) exercise to be conducted at the (site/facility). The plan provides the methods, techniques and assignments/ responsibilities for ensuring:

- Broadened public/media understanding and acceptance.
- Increased (site/facility) employee support/participation.
- Reduced uncertainty.
- Minimized liabilities.
- Enhanced coordination and operating relationships
- The success of this plan will result in the realization that the (site)/ DOE, interest are the same as those of its various audiences in the area of emergency management.

Objectives

- Ensure that the public and media are aware of the planned exercise and that no unwarranted concerns are generated as a result of the exercise planning and/or conduct.

- Provide the public and media with an understanding of DOE and DOE contractor commitment to ensuring public health and safety through development of a comprehensive emergency management system.

- Coordinate with State, local, and Tribal and various Federal agency authorities in reaching out to potentially affected populations concerning the development and conduct of DOE emergency management exercises.

8. PUBLIC INFORMATION AND MEDIA PLAN (continued)

- Provide the local media an opportunity to observe and report on the activities leading up to and during conduct of DOE emergency management exercises.

Audiences

- General public located in the geographic area of the exercise.
- Community leaders and decision makers within those areas that will potentially be impacted by the exercise scenario including those leaders who would have reason to comment publicly on an emergency event at the site.
- Site and DOE employees.
- Develop and broadcast media in local area including newspapers, local TV and cable stations, and local radio stations.
- Nonparticipating offsite response groups.

Messages

- A major emergency exercise is planned for the (site name) on (date of exercise) that will test and evaluate regional emergency plans and responses.
- Emergency exercises are conducted to evaluate a facility/site emergency management system. Exercises are also used to enhance communications between agencies and practice their policies, notifications, and procedures in cooperation with DOE, and (site name) procedures. In the event of an actual emergency, officials will, in turn be better prepared to handle public health and safety issues.

8. PUBLIC INFORMATION AND MEDIA PLAN (continued)

- Emergency exercises are an important responsibility of government at all levels. Therefore, this emergency exercise will involve State, local, and Tribal agencies and other offsite organizations to ensure that all affected communities receive proper notifications and promoting, the highest level of public and employee health and safety.

- Participants in exercises may include the DOE, including headquarters and local offices, site EROs, State, local Tribal emergency organizations including police, fire, and hospital, county decision makers, and other agencies responsible for public safety and emergency response.

- Exercises demonstrate and test complex integration and coordination of information and resources between governmental agencies at the Federal and State levels as well as community agencies, site employees and the general public.

Strategic Actions

- Reach target audiences with messages.
- Identify a team of DOE, contractor, and community officials to disseminate information by:

  - briefing local elected leaders; developing a fact sheet for public dissemination;
  - providing media opportunities for reports; and
  - providing information to other Federal and State agencies for widest dissemination.

- Produce and distribute a media kit specifically designed to be used prior to and during the exercise.

- Produce and distribute Public Service Announcements (PSAs) to run on local TV, cable, and radio stations.

8. PUBLIC INFORMATION AND MEDIA PLAN (continued)

Products and Scheduling

- Identify audiences and interested parties. (target date)

- Identify a team of DOE, State, and local officials and spokes persons to participate in the exercise development process. (target date)

- Schedule meetings, presentations, and briefings. (target date)

- Produce a media kit to include the following. (target date)

- Press releases:
  - Background material/information and acronym list
  - Hazardous materials background materials
  - Still photographs
  - Maps
  - News/informational articles on emergency preparedness at the site
  - Media kit folder

- Produce and distribute PSAs as follows:

  - Produce radio PSAs. (target date)
  - Produce video PSAs. (target date)
  - Distribute radio and video PSAs. (target date)
  - Write articles to appear in site employment newsletters. (target date)

9. SAFETY PLAN

Introduction

This section constitutes the Safety Plan for the conduct of *READY - 2000*.

Scope

This Exercise Safety Plan has been included in the exercise package so that exercise controllers and evaluators will be able to anticipate and recognize unplanned events that could result in personal injury or unforeseen property damage. It enables exercise participants to be governed by the safety guidelines established for the exercise.

No attempt has been made to duplicate safety issues detailed in other portions of the exercise package. Applicable sections of the exercise package are referenced, and specific issues are detailed there. Protocol for termination of the exercise is included in the Control section of the exercise package.

Pre-exercise Safety Requirements

The pre-exercise controller/evaluator training will address the content of this plan to assure adequate understanding of safety by all controllers and evaluators. A pre-exercise announcement will be made by (specify position) over the (radio network or frequency) to all site locations. Participating off-site agencies will be notified by a message faxed to designated locations.

Controllers will be staged before the exercise is scheduled to begin and will ensure that there are no pre-existing safety concerns that would affect the start of the exercise. Controller assignments and locations are identified in the Control section of the exercise package. The senior controller will obtain a safety check from all lead controllers prior to beginning the exercise.

9. SAFETY PLAN (continued)

Exercise Activity Boundaries and Off-Limit Areas

The exercise boundaries are defined by the boundaries of the (site/facilities) involved in the exercise. Specific exercise boundaries are discussed and depicted on maps in the exercise package. Safety concerns that arise during the exercise will be dealt with immediately by exercise controllers in the affected area. As exercise objectives are accomplished certain areas may be allowed to return to normal activities.

Safety Equipment

Exercise participants are to follow all existing guidelines for the use of protective equipment in designated areas. The following equipment is applicable to this exercise.

- Controller communications - for controllers' use.
- Exercise identification armbands/vests/caps.
- Illumination devices.
- First aid kit [occupational medicine aid stations available onsite - ambulance will be available at the event scene(s).
- Water cooler [water will be available at the event scene(s)].
- Field teams will be directed to carry water.
- Personnel comfort – dress for the forecasted weather conditions.

9. SAFETY PLAN (continued)

- Fire extinguisher - an extinguisher will be provided for smoke generation devices.
- Eye/hearing protective devices – if required.
- Gloves – if required.
- Field teams should don gloves as necessary to obtain samples.
- Hard hats – if required.
- Protective clothing – if required.
- Approved spark arresters - see fire extinguisher.

Site-Specific Safety Hazards

- Outside Hazards
  - Exercise participants are required to follow all hazard postings in exercise areas.
  - Exercise participants must obey all traffic laws during the exercise. Response personnel will use emergency lights and sirens on site but lights and sirens will be turned off once they leave the boundaries of the facility being exercised.
  - Field teams will travel on designated roads and trails. Field team vehicles will be equipped with fire extinguishers and shovels. No vehicles will go off road. Wildlife such as snakes and insects may be encountered.

9. SAFETY PLAN (continued)

- In the event of electrical storms, high winds, or other severe weather, participants will follow controller's instructions.

- Controllers and responders will watch all participants for symptoms of heat stress. Controllers will ensure that all emergency response personnel are allowed the opportunity to rehab whenever necessary. Controllers are to halt exercise play anytime a responder appears to be in distress.

The following outside hazards are applicable:

- Traffic. Field teams need to be aware of road condition hazards and traffic, especially when stopping to survey.

- Terrain. Field teams may be required to use unpaved roadways to survey. Each vehicle will be equipped with fire extinguisher, a shovel and bucket, and communication capabilities.

- Overhead obstructions.

- Electrical storms – see other.

- Heat stress - see other.

- Cold stress (hypothermia).

- High winds - see other.

- Visibility conditions - see other.

9. SAFETY PLAN (continued)

- Other. Weather conditions as they relate to actual conditions, will be discussed with participants before the exercise begins or when they arrive at their assigned location.

- Inside Hazards

Exercise participants will follow facility lock and tag procedures when working on any energized systems. Participants will be instructed to use caution in the areas where equipment is in operation. Exercise participants will not enter any confined spaces during the exercise.

The following items pose potential inside hazards:

- Electrical hazards.

- Mechanical equipment/machinery.

- Hazardous material storage/use areas.

- Fuel loading concerns.

- Thermal hazard

- Tripping hazards. Participants should be aware of potential tripping hazards, especially around the event scene area.

- Confined spaces.

- Elevated locations.

9. SAFETY PLAN (continued)

- Hazardous Materials

  Exercise participants must have appropriate training to enter hazardous materials areas and will follow existing facility procedures for hazard control. To prevent a potential non-radiological hazard during this exercise:

  - Participants have had appropriate hazardous materials training.

  - TSD or RCRA permitted locations are identified in the Precautions/ Limitations and Scenario sections of the exercise package.

- Radiation Safety Provisions

  - All radiation alarms will treated as real alarms. No radiation alarms will be initiated as part of the exercise. All personnel will follow existing radiation control procedures and must have received the training necessary to allow them to enter any control area(s) included as part of the exercise. All personnel will wear appropriate dosimetry at all times.

  - Radiation control procedures will be followed and personnel will be required to monitor for radiation whenever they leave a controlled area.

  - The following items are necessary to prevent a potential hazard to radiation safety during this exercise.

  - Notifications/approvals required prior to the activation of any radiation alarm.

  - Personnel participating in the exercise have been briefed or trained as required on any radiological hazards.

9. SAFETY PLAN (continued)

- Participants have had the appropriate Radiation Worker Training.

- Personnel entering radiation or radiological controlled areas possess the appropriate protective equipment and dosimetry.

- **Personnel Assignments**

All safety concerns will be brought to the attention of the exercise Safety Director. The Controller Organization section of the exercise package identifies personnel assignments. No changes will be made to controller assignments without prior assurance that any replacements have equal or greater understanding of safety concerns that could be encountered at the location to which they are assigned.

- **Participation by Offsite Agencies**

  - Offsite agencies participating in this exercise have been identified in the Scope section of the exercise package. Since the safety of personnel from offsite agencies is primarily the individuals' responsibility shared by the controller for the participating agency, offsite personnel responding to the onsite exercise will follow the instructions and requirements of this exercise safety plan. Safety concerns offsite are to be communicated immediately to the Exercise Safety Director and the lead offsite controller.

  - Offsite agencies that are not participating will be notified that an exercise is taking place that will not require their participation.

9. SAFETY PLAN (continued)

- **Personnel Safety Provisions**

Specific incidents and materials that may have adverse physical effects on personnel have been addressed in specific sections of the exercise package. Medical data, environmental applications, and hazardous activities of the exercise are also addressed in pertinent sections of the exercise package. Every effort has been made to anticipate and minimize hazardous situations inherent in this exercise.

The following provisions apply to this exercise:

- Individual exercise participants are personally responsible for their individual safety.

- Each participant must monitor his/her own physical condition for signs of overexertion or distress.

- Any participant, who observes another person injured or otherwise in need of assistance, will immediately exercise activities and render aid/call for assistance.

- All injuries, no matter how slight must be immediately reported to the nearest controller.

- All ascents to or descents from elevated positions will be by ladder, stairway, or other safe method. Jumping from elevated positions will not be allowed.

- All visitors and observers must remain in their designated locations throughout the exercise.

- Controller personnel are familiar with the hazards of the equipment involved and the required safety measures.

9. SAFETY PLAN (continued)

- There are no environmental conditions (extreme heat, cold, ice/snow, confined space, oxygen deficiency, etc.) that will affect the safety of participants for this exercise.

- The majority of controller personnel will not operate or handle any equipment other than radios, pagers, or tape recorders. However, those controllers involved in setting the stage for the exercise will set up and operate a smoke generating machine. Any special safety provisions for this operation are included in the Job Hazards Analysis.

- **Vehicle Safety Provisions**

The following vehicle safety precautions apply to this and all EMS exercises at DOE facilities:

- No vehicle will be driven in such a manner that posted speed limits are exceeded or safe driving rules are violated.

- Only those vehicles involved in the exercise will be used for movement.

- Vehicles may not be mounted or dismounted until they come to a full stop.

- Care should be taken when operating a vehicle in reverse.

- There will be no attempt to use a vehicle to crash, block, or in any way endanger another vehicle or individual.

- Placing a blocking vehicle(s) on the shoulder of the road and notifying a controller that a roadblock has been established will be used to simulate any required road blocks.

9. SAFETY PLAN (continued)

- All accelerations, decelerations, cruising, turns, etc. will be accomplished in a safe manner.

- All personnel in moving vehicles will wear seat belts if the vehicle is equipped with them.

- **Exercise Safety and Control Organization**

The Exercise Director is the senior safety officer for the exercise. The Exercise Safety Director answers directly to the Exercise Director and will ensure that all activities are conducted in accordance with this safety plan. The Exercise Safety Director may appoint an exercise safety officer.

The Exercise Safety Director is responsible for the following:

- Ensure that a risk assessment has been prepared and approved for the exercise or scenario.

- Ensuring that site- and facility-specific safety briefings are conducted for all participants.

- Verifying that a safety survey of the exercise areas is/are conducted immediately before the exercise to verify that:

  > all hazard and off-limit areas are clearly marked, and

  > the area(s) is/are ready to commence exercise play safely.

- Ensuring that exercise activities are halted in the event of an actual emergency.

9. SAFETY PLAN (continued)

- The fire department exercise working group member is responsible for identifying manpower requirements for the exercise to ensure that site fire safety is not degraded.

- All controllers are designated as assistant exercise safety officers - Any controller who observes any unsafe act or condition will immediately correct the situation or halt the exercise until it is corrected.

Controllers are responsible for the following:

- Attending site/facility-specific exercise safety briefings.

- Conducting a safety survey of the exercise site and clearly marking hazardous and off-limits areas before the exercise.

- Performing safety checks of their areas and of the exercise participants to whom they are assigned and report the results to their lead controllers prior to the start of the exercise.

- Ensuring that all personnel comply with the provisions of this safety plan and with common-sense safety precautions.

- Ensuring that communications during the exercise are proceeded with the announcement **"THIS IS AN EXERCISE."**

- Notifying emergency medical services and fire protection if they are needed for an actual emergency in the exercise area.

- Notifying facility personnel if there is a real emergency in the exercise area.

- Notifying fire and/or protective force dispatchers if any alarm is to be activated.

10. SECURITY PLAN

- A pre-exercise briefing will be conducted to ensure all Controllers understand the exercise parameters.
- Controllers will be in their assigned positions prior to the initiation of the exercise.
- Controllers will be properly badged and authorized access to their areas of assignments.
- All RFETS security guidelines shall apply at all times during the exercise.
- All handguns will remain holstered at all times and no other weapons will be used during event play. The use of MILES gear or blank ammunition will not be part of this exercise.
- The use of "flash-bangs" is not authorized for use at any time during the exercise.
- All participants shall be properly badged throughout the conduct of the event.
- No exemptions to any site security requirement or procedure are authorized.
- Offsite agencies must be authorized to enter the site in accordance with existing policies and procedures.
- Exercise Participants, Controllers, Evaluators, and Observers are responsible for the proper handling, review and disposition of any classified material(s).
- Actual security incidents may require the interruption of exercise activities. The Security Lead Controller will notify the Exercise Director of the need to interrupt the exercise activities. The Exercise Director will make all decisions regarding exercise interruption, postponement, or termination.

10. SECURITY PLAN (continued)

- The exercise scenario will not involve handling, movement, or accountability of any special nuclear material. All special nuclear material will be secured prior to exercise initiation.

- A safeguards and security force consisting of 2 personnel (located in the MAA gate house) accompanied by 1 RCT acting as part of the control organization will be positioned inside of Building 371 prior to exercise initiation. The purpose of this group is to ensure material accountability and security control requirements and radiological control during the conduct of this exercise. This group of individuals will be exempted from exercise play.

- All records, logs, and other documentation generated by emergency facilities for the exercise shall be retained until reviewed for security classification.

11. ADMINISTRATION AND LOGISTICS PLAN

Introduction

This appendix provides an Administration/Logistics Plan to facilitate the planning and conduct of *READY - 2000*. It provides a recommended preliminary draft for an exercise-specific Plan.

Scope

This plan is prepared for the purpose of ensuring the requisite administrative and logistics activities associated with the exercise planning, preparations, conduct, and follow-up are accomplished. It consists of a series of checklists for use by the exercise planning organization.

- **Development.** The following sections have been reviewed and/or approved by the exercise development organization and reflect the elements and contents of the Exercise Design Manual.

  - ☐ Identify Purpose of the Exercise
  - ☐ Identify and Develop Scope of Exercise Activities
  - ☐ Develop Exercise Objectives
  - ☐ Develop Scenario Narrative Summary
  - ☐ Develop Exercise Scene Graphics and Maps
  - ☐ Develop Master Scenario Events Lists
  - ☐ Develop Supporting Exercise Data – HAZMAT/Radiological/Medical/Role Player
  - ☐ Develop Player and Responder Guidelines
  - ☐ Identify Onsite and Offsite Participants
  - ☐ Develop Exercise Design Guidelines and Timeline
  - ☐ Identify Exercise Control and Evaluation Organization Requirements
  - ☐ Develop Exercise Controller Guidelines.
  - ☐ Develop Exercise Evaluator Guidelines.

11. ADMINISTRATION AND LOGISTICS PLAN (continued)

- ☐ Identify Exercise Evaluation Requirements and Objectives
- ☐ Identify Exercise Documentation Requirements.
- ☐ Develop Exercise Observer Guidelines.
- ☐ Identify and Develop Exercise Evaluation Criteria.
- ☐ Identify Exercise Controller and Evaluator Cadre.
- ☐ Identify Exercise Scenario Event Simulation Requirements and Props.
- ☐ Identify and Develop Schedule of Key Events and Activities.
- ☐ Develop an Exercise Public Information and Media Plan.
- ☐ Develop an Exercise Safety Plan.
- ☐ Develop and Exercise Security Plan.
- ☐ Develop an Exercise Administration and Logistics Plan.
- ☐ Develop a List of Common Acronyms and Abbreviations.
- ☐ Develop a Bibliography of References Used in the Design of the Exercise Package.
- ☐ Develop Exercise Message Injects.

- **Production and Distribution**

  - ☐ Technical writing review.
  - ☐ Product final draft.
  - ☐ Develop concurrence distribution list.
  - ☐ Authorized Derivative Classifier review.
  - ☐ Distribution of draft.
  - ☐ Concurrence by participating organizations (list each for check-off purposes).
  - ☐ Insert final comments.
  - ☐ Develop distribution list.
  - ☐ Produce exercise package.
  - ☐ Controlled distribution.

11. ADMINISTRATION AND LOGISTICS PLAN (continued)

- **Safety Administration/Logistics Checklist**

  - ☐ Safety Officer and organization assigned (from Safety Plan).
  - ☐ Safety equipment and materials requirements (from Safety Plan).
  - ☐ Medical resources and coverage required.
  - ☐ Medical resources briefed.
  - ☐ Special safety precautions.

  Note: This list should correlate with the Safety Plan.

- **Security Administration/Logistics Checklist**

  - ☐ Clearance transfer complete.
  - ☐ Badge and security requirements complete.
  - ☐ Escorts identified, contacted, and briefed.
  - ☐ Security shadow force requirement identified (from Security Plan).
  - ☐ Security shadow force identified and briefed.
  - ☐ Weapons policy published (from Security Plan).

  Note: This list should correlate with the Safety Plan.

- **Media Checklist**

  - ☐ Video/audio
  - ☐ Press badges.
  - ☐ Validate phone numbers for media calls.
  - ☐ Coordinate actual media attendance.

11. ADMINISTRATION AND LOGISTICS PLAN (continued)

- **Meeting Checklist**

  - ☐ Scheduled date and time.
  - ☐ Number of attendees.
  - ☐ Meeting purpose or function.
  - ☐ Schedule audio/visual equipment.
  - ☐ Develop agenda.
  - ☐ Publish and distribute announcement.
  - ☐ Produce handouts or other support materials.
  - ☐ Arrange for recorder for taking minutes.
  - ☐ Ensure facility setup.
  - ☐ Produce sign-in sheet.
  - ☐ Produce draft of minutes.
  - ☐ Finalize and distribute minutes.

- **Training Session Checklist**

  - ☐ Scheduled date(s) and time(s).
  - ☐ Number of students.
  - ☐ Training course or class name.
  - ☐ Schedule facility.
  - ☐ Schedule audio/visual equipment.
  - ☐ Develop schedule.
  - ☐ Publish and distribute announcement.
  - ☐ Arrange for food/drinks.
  - ☐ Sign-in sheet.
  - ☐ Produce handouts or other support materials.
  - ☐ Ensure setup of facility.

11. ADMINISTRATION AND LOGISTICS PLAN (continued)

- ☐ Arrange for support during conduct of the class.
- ☐ Publish class roster.

- **Pre-Exercise Logistics/Simulations Checklist**

  - ☐ Controller/Evaluator Organization meals ordered and pre-staged.
  - ☐ Meal distribution.
  - ☐ Pre-exercise meeting schedule published.
  - ☐ Pre-exercise meetings (Scenario development, briefings).
  - ☐ Control cell setup.
  - ☐ Radio channels are confirmed.
  - ☐ Control communications directory published.
  - ☐ Control communications equipment pre-staged and tested.
  - ☐ Spare radio batteries are pre-staged.
  - ☐ Evaluator, controller, observer, and exempt personnel vests or identification means pre-staged.
  - ☐ Restroom facilities identified or pre-staged.
  - ☐ Simulation aids are setup and tested.
  - ☐ Smoke generator.
  - ☐ Shipping containers (wooden waste crates, TRU waste drums as props)
  - ☐ Barricade signs/tape/rope.
  - ☐ Injury/medical indicators.
  - ☐ Moulage
  - ☐ Spill simulations (dyed water, straw).
  - ☐ Simulator training scheduled (use training checklist) and conducted.

11. ADMINISTRATION AND LOGISTICS PLAN (continued)

- **Conduct of Exercise Administration/Logistics Checklist**

  - ☐ Participant rosters distributed.
  - ☐ Meals distributed.
  - ☐ Movement of controllers and evaluators, on request.
  - ☐ Public inquiries handled as needed.
  - ☐ Media inquiries handled as needed.

- **Post-Exercise Administration/Logistics Checklist**

  - ☐ Meeting (critique) locations are setup and ready (use meeting checklist).
  - ☐ Participant rosters collected.
  - ☐ Critique sheets distributed and collected.
  - ☐ Critique minutes collected.
  - ☐ Evaluator sheets collected.
  - ☐ Communications equipment returned, checked, and accounted for.
  - ☐ Vests or other participant identification devices collected.
  - ☐ Simulations disassembled, cleaned, operation checked, and returned.
  - ☐ Support vehicles returned.
  - ☐ Special support equipment collected and returned.
  - ☐ Trash collected.
  - ☐ Letters of participation developed and distributed
  - ☐ Training records of all participants updated.
  - ☐ Letters of appreciation distributed to organization and/or individuals.
  - ☐ Post exercise evaluator meetings conducted (use meeting checklist).
  - ☐ Financial information requested, totaled, and submitted to management.
  - ☐ Lessons learned report developed (used for the planning, development and conduct of the exercise – not the same as the evaluation report.)
  - ☐ Evaluation report developed, approved, and published.
  - ☐ Findings added to the tracking system.

This Page Intentionally Left Balnk

APPENDICES

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

LIST OF ACRONYMS & ABBREVIATIONS

NOTE: *The acronyms and abbreviations listed are commonly used in Emergency Planning documents such as procedures and hazards assessments. While they may not be used in this plan, they are included here as a reference tool.*

ALOHA - Arial Location Of Hazardous Atmospheres
BERO - Building Emergency Response Operations
BEST - Building Emergency Support Team
CAS - Central Alarm Station
CDPHE - Colorado Department of Public Health and Environment
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
CFR - Code of Federal Regulations
CM - Crisis Manager
CMT - Crisis Management Team
CSS - Crisis Support Staff
DERS - Digital Emergency Response System
DOE - (United States) Department of Energy
EAL - Emergency Action Level
EMG - Emergency Management Guide
EMO - Emergency Management Organization
EMT - Emergency Medical Technician
EOC - Emergency Operations Center
EP - Emergency Preparedness
EPA - Environmental Protection Agency
EPC - Emergency Preparedness Coordinator
EPCRA - Emergency Planning and Community Right-to-Know Act
EPLAN - Emergency Plan
EPZ - Emergency Planning Zone
ERO - Emergency Response Organization
ERPG - Emergency Response Planning Guidelines

LIST OF ACRONYMS & ABBREVIATIONS (continued)

FD	-	Fire Department
FEMA	-	Federal Emergency Management Agency
FRERP	-	Federal Radiological Emergency Response Plan
FST	-	Field Sampling Team
FWC	-	Functional Work Center
GE	-	General Emergency
HAC	-	Hazards Assessment Center
HAZMAT	-	Hazardous Material
HEPA	-	High Efficiency Particulate Air
HQ	-	Headquarters
HVAC	-	Heating, Ventilating and Air Conditioning
IC	-	Incident Commander
ICO	-	Incident Command Organization
ICP	-	Incident Command Post
IH	-	Industrial Hygiene
IWCP	-	Integrated Work Control Program
JEFFCO	-	Jefferson County
JIC	-	Joint Information Center
K-H	-	Kaiser-Hill
LLC	-	Limited Liability Company
LLMW	-	Low-Level Mixed Waste
LLW	-	Low-Level Waste
LS/DW	-	Life Safety/Disaster Warning
METS	-	Metropolitan Emergency Telephone System
MOA	-	Memoranda of Agreement
MOU	-	Memoranda of Understanding
MPH	-	Miles Per Hour
NFPA	-	National Fire Protection Association
NMSM	-	Nuclear Material Safeguards Manual

LIST OF ACRONYMS & ABBREVIATIONS (continued)

NRC	-	Nuclear Regulatory Commission
OCC	-	Offsite Coordination Center
OM	-	Occupational Medicine
PA	-	Protective Action
PAC	-	Protective Action Criteria
PAG	-	Protective Action Guide
PAR	-	Protective Action Recommendation
PI	-	Public Information
PPE	-	Personal Protective Equipment
RARC	-	Regional Atmospheric Response Center
RCRA	-	Resource Conservation and Recovery Act
RCT	-	Radiological Control Technician
RFFO	-	Rocky Flats Field Office
RM	-	Recovery Manager
ROI	-	Radiological Operating Instruction
S&S	-	Safeguards and Security
SAE	-	Site Area Emergency
SCBA	-	Self-Contained Breathing Apparatus
SEOC	-	State Emergency Operations Center
SNM	-	Special Nuclear Material
SS	-	Shift Superintendent
TOC	-	Tactical Operations Center
TRU	-	Transuranic
TRUM	-	Transuranic Mixed
TSCA	-	Toxic Substances Control Act
UCNI	-	Unclassified Controlled Nuclear Information
WSLLC	-	Wackenhut Services Limited Liability Company

APPENDIX 2

BIBLIOGRAPHY

BIBLIOGRAPHY

- 1-D97-ADM-16.01, Occurrence Reporting Process
- 1-MAN-001-SDRM, Site Documents Requirements Manual
- 1-P04-CMCAP-16.00, Commitments Management and Corrective Actions Process
- 1-V41-RM-001, Records Management Guidance for Records Source
- 1-48000-QAR-001, Quality Assurance Records
- 4-62200-IHPM-1.8, General Response to Emergency or Abnormal Situations
- 95-EPIP-0048, Emergency Public Information
- ANSI/NFPA 472, Standards for Professional Competence of Responders to Hazardous Materials Incidents
- Boulder County/City of Boulder Emergency Operations Plan
- Colorado Department of Health Radiological Emergency Plan, Rocky Flats (also published as Annex XXV, Colorado State Emergency Operations Plan), March 31, 1994
- DOE Order 151.1, Comprehensive Emergency Management System
- DOE Order 232.1, Occurrence Reporting and Processing of Operations Information
- DOE Order 5480.7, Fire Protection
- DOE Order 5633.3A, Control and Accountability of Nuclear Materials
- EPA - 520/1-75-001, Protective Action Guides and Protective Actions for Nuclear Incidents
- Fire Department SOP Manual
- Hazardous Waste Requirements Manual
- Health and Safety Practices (HSP) Manual
- Jefferson County Emergency Operations Plan
- NFPA 472, Standards for Professional Competence of Responders to Hazardous Materials Incidents
- Nuclear Material Safeguards Manual (NMSM)
- Occupational Medicine (OM) Emergency Management Plan
- Occupational Medicine (OM) Inventory and Equipment Manual
- Radiation Dosimetry Instruction (RDI) 5106, Actions in Response to Potential Inhalations
- Radiological Operating Instructions (ROI) Manual
- Standard Operating Procedures (SOPs) Manual

BIBLIOGRAPHY (continued)

- Title 29 CFR 1910.38, Employee Emergency Plans and Fire Prevention Plans
- Title 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response
- Title 40 CFR 300, National Oil and Hazardous Substances Pollution Contingency Plan
- Title 40 CFR 302, Designation, Reportable Quantities and Notification
- Title 40 CFR 311, Worker Protection Standards for Hazardous Waste Operation and Emergency Response
- Title 40 CFR 355, Appendix A, The List of Extremely Hazardous Substances and Their Threshold Planning Quantities
- WSLLC Emergency Security Operations Procedures

APPENDIX 3

EXERCISE MESSAGES

EXERCISE MESSAGE/INJECT

Message/Inject #: 1		**Time: 08:00 am**	**H-Hour: 00:00**

From: Controller #16	**To: Worker #3 in Room 3809**

Subject: Initial Report of Emergency in Room 3813, Building 374

THIS IS AN EXERCISE

INSTRUCTION: USE A RADIO AND CALL 2911. REPORT THE FOLLOWING INFORMATION TO WHOEVER ANSWERS:

THIS IS AN EXERCISE

THERE IS A LARGE FIRE IN ROOM 3813!!

THIS IS AN EXERCISE

IF ASKED:

- **THERE IS SO MUCH SMOKE, I CAN'T SEE IN THE ROOM.**
- **THERE WAS WORK ONGOING IN THE ROOM AND I BELIEVE THERE WERE WOKEERS IN THERE.**

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 2		**Time: Upon Completion of Fire Phone Call**	**H-Hour: 00:03**
From: Controller #16		**To: Worker #3**	
Subject: Report of Emergency to Building Management			

THIS IS AN EXERCISE

INSTRUCTION: UPON COMPLETION OF THE FIRE PHONE CALL, REPORT THE FOLLOWING TO THE CCA VIA YOUR RADIO.

THERE'S LARGE FIRE IN ROOM 3813! IT'S HOTTER THAN HELL BACK HERE! THERE'S LOTS OF SMOKE … I CAN'T SEE A THING! I'M GETTING OUT OF HERE!

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 3		**Time: Upon Arrival of Building Responders**	**H-Hour: 00:05**
From: Controller # 25		**To: First Responders/BEST/RCTs**	
Subject: Description of Conditions in Room 3813			

THIS IS AN EXERCISE

THICK, ACRID SMOKE PREVENTS YOUR ACCESS TO ROOM 3813 AT THIS TIME

Levels of Contamination for BEST, RCTs, Fire Fighters, and Others Entering Zones A and B

AREA	RADIATION LEVELS	ELECTRA	LUDLUM
Booties/Boots	From 100,000 dpm/100cm^2 to 25,000 dpm/100cm^2 (see note.)	16,665 cpm to 4200 cpm	25,000 cpm to 6300 cpm
Gloves	60,000 dpm/100cm^2 to < MDA	10,000 cpm to < MDA	15,000 cpm to < MDA

Note: All Beta, Gamma, and Neutron readings, if taken, will be "as read."

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 4		**Time: Upon Arrival Of Fire Dept.**	**H-Hour: 00:12**
From: Controller #19		**To: Fire Sector Chief, 374 Command, Interior**	
Subject: Conditions Observed in Room 3813			

THIS IS AN EXERCISE

AS YOU APPROACH ROOM 3813, YOU OBSERVE THE FOLLOWING:

- **EXTREME HEAT AND THICK SMOKE OBSCURING VISIBILITY.**

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 1-1	Time: Upon Arrival and When EMT Displays Proper Technique	H-Hour: 00:15

From: Controller #11 **To:** EMT Attending

Subject: Medical Status and Injuries Sustained by Worker 4

THIS IS AN EXERCISE

- **Male, approximately 25 years of age.**
- **Cause of Injuries: Blunt trauma and fracture of the left arm after being caught in a door forcibly closed inadvertently by another employee while evacuating Room 3813 of Building 374.**
- **Physical Signs/Symptoms: Open fracture of the left ulna and radius. Artery severed cleanly, no jagged edges, very little blood. Patient exhibits typical signs and symptoms of shock.**
- **Pulse: 120**
- **Blood Pressure: 90/60**
- **Respiration's: 30**

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 1-2		Time: When EMT Displays Proper Technique	H-Hour: 00:15

From: Controller #11 | **To: EMT Attending**

Subject: Medical Status and Injuries Sustained by Worker 5

THIS IS AN EXERCISE

- **Male, approximately 45 years of age.**
- **Cause of Injuries: Patient was attempting to extinguish the fire in Rook 3813, when flames shot up and ignited his beard. The employee inadvertently inhaled out of surprise resulting in serious burns to oral and nasal cavities, larynx and bronchial tree.**
- **Physical Signs/Symptoms: The patient exhibits labored respiration's, shortness of breath, productive cough, dyspnea and cyanosis. The lips are cynotic. Pupils are responsive. There are visible signs of 1st and 2nd degree facial burns around chin, nose, and lips, with singed eyebrows, lashes and hair at the scalp line.**
- **Pulse: 100**
- **Blood Pressure: 116/80**
- **Respiration's: 26**

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 5		**Time: When Fire Is Extinguished in Room 3813**	**H-Hour: 00:22**
From: Controller #19		**To: Fire Sector Chief, 374 Command, Interior**	
Subject: Conditions Observed in Room 3813 When Fire Is Extinguished			

THIS IS AN EXERCISE

WHEN THE FIRE IS EXTINGUISHED IN ROOM 3813, YOU OBSERVE THE FOLLOWING:

- **TWO INJURED EMPLOYEES ON THE FLOOR.**
- **A MASSIVE FIRE OCCURRED THAT INVOLVED 2 (TWO) WOODEN CRATES , ONE FULL-SIZE METAL CRATE, AND TEN 55-GALLON DRUMS.**
- **THE CRATES AND DRUMS ARE SEVERELY BURNED OR CHARRED, AND NO MARKINGS ARE READABLE.**
- **MOST DRUMS APPEAR TO BE WHITE BUT TWO MAY BE BLACK AND WHITE.**
- **THE LIDS HAVE BLOWN OFF THREE DRUMS. FOUR OTHER LIDS ARE BUCKLED.**
- **THE BUNG HAS BLOWN OFF THE BLACK AND WHITE DRUM NEAREST THE WELDING MACHINE.**
- **THE ROOF IS NOT BREACHED**

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 6C		**Time: If Fire Dispatch Requests Air Life Support**	**H-Hour: 00:25**
From: Controller #6		**To: Dispatcher in Fire Dispatch Center**	
Subject: Contingency Inject in the event Fire Dispatch Requests Air Ambulance for Transport of Injured			

THIS IS AN EXERCISE

AN AIR AMBULANCE IS NOT AVAILABLE.

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 7		**Time: Upon Arrival & Display of Proper Monitoring Techniques**	**H-Hour: 00:25**

From: Controllers #25, 26, 27, 28, 29	**To: Responding RCTs**

Subject: Radiological Data and Information on Levels of Contamination Inside of Building 374

THIS IS AN EXERCISE

Survey Data for Surface Contamination

During radiological surveys conducted in affected areas/zones around Building 374, inform the Radiological Control Technicians conducting the surveys that the following levels of contamination are present:

- **Zone A** is inside of Room 3813.
- **Zone B** is from the doors to Room 3803, 3809, and 2804 from Room 3813 to a point in each room approximately 10 meters west of the doors.

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Zone A	After fire levels not wet or covered by foam are infinity inside Room 3813	Off Scale	Off Scale
Zone B	10,000 dpm/100 cm^2 at doors to 2000 dpm/100 cm^2 at 10 meters from the doors from Room 3809	1665 cpm to 335 cpm	2500 cpm to 500 cpm

All Beta, Gamma, and Neutron readings, if taken, will be "as read."

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 1-3	Time: When EMT Displays Proper Technique	H-Hour: 00:25

From: Controller #11 **To:** EMT Attending

Subject: Medical Status and Injuries Sustained by Worker # 1

THIS IS AN EXERCISE

- **Male, approximately 35 years of age.**
- **Cause of Injuries: Electrocution**
- **Physical Signs/Symptoms: Entrance wound through right hand, an exit wound through right thigh. Wounds include second and third degree burns to hand, skin is peeled off of three fingers with charring (eschar) to edges and redness to center of burns. Thigh has mostly 2nd degree burns with a great deal of redness and slight charring to edges. Tissue damage is deep with nerve and muscle involvement. There is minimal bleeding from either wound. Patient also exhibits dysrhythmia, including sinus tachycardia, but is unconscious with shallow respirations.**
- **Heart Rate: 140**
- **Blood Pressure: 100/60**
- **Respiration's: 6**

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 1-4	Time: When EMT Displays Proper Technique	H-Hour: 00:25

From: Controller #11 **To:** EMT Attending

Subject: Medical Status and Injuries Sustained by Worker # 2

THIS IS AN EXERCISE

- **Female, approximately 30 years of age.**
- **Cause of Injuries: Electrocution**
- **Physical Signs/Symptoms: Minor burns to bilateral hands, mental status changes including confusion. Skin is clammy, pale with slightly ashen hue and circumpolar cyanosis. Minor burns bilaterally to the hands, mental status changes including confusion. Skin is clammy and pale with slightly ashen hue.**
- **Pulse: 60**
- **Blood Pressure: 108/60**
- **Respiration's: 16**

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 8		**Time: During the Accountability Process**	**H-Hour: 00:30**
From: Controller #18		**To: Worker #6**	
Subject: Information Concerning Workers Not Accounted For			

THIS IS AN EXERCISE

INSTRUCTIONS: AS YOU ARRIVE AT THE ASSEMBLY AREA, REPORT THE FOLLOWING TO THE PERSON IN CHARGE OF ACCOUNTABILITY:

"I PULLED THIS ACCOUNTABILITY TAG OFF THE BOARD BECAUSE I THOUGHT SHE WAS RIGHT BEHIND ME. I CAN'T FIND HER AND THE LAST TIME I SAW HER WAS IN THE VICINITY OF ROOM 3813."

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 2-1	Time: When EMT or RCT Displays Proper Technique	H-Hour: 00:40

From: Controllers #11 & 25	To: EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker # 1

THIS IS AN EXERCISE

PULSE: 140 AND THREADY
BLOOD PRESSURE: 94/58
RESPIRATIONS: 6 AND SHALLOW

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 2-2		Time: When EMT or RCT Displays Proper Technique	H-Hour: 00:40

From: Controllers #11 & 25	To: EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker # 2

THIS IS AN EXERCISE

Controller Note: If patient isn't provided oxygen and treated for shock, provide the following additional inject:

THE PATIENT IS NOW UNCONSCIOUS

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 2-3	Time: When EMT or RCT Displays Proper Technique	H-Hour: 00:40

From: Controllers #11 & 25 **To:** EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker # 4

THIS IS AN EXERCISE

- **PULSE: 124**
- **BLOOD PRESSURE: 88/56**
- **RESPIRATIONS: 24**

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 2-4	Time: When EMT or RCT Displays Proper Technique	H-Hour: 00:40

From: Controllers # 11 & 25 **To:** EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker # 5

THIS IS AN EXERCISE

PULSE: 100
BLOOD PRESSURE: 116/80
RESPIRATIONS: 22

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 9		**Time: Upon Transport of Injured from Accident Scene**	**H-Hour: 01:00**

From: Exercise Director	**To: Controller #11**

Subject: Exercise Transport Information for Injured Workers

THIS IS AN EXERCISE

THE FOLLOWING IS THE EXERCISE TRANSPORT PLANS FOR THE INJURED WORKERS. ENSURE DRIVERS ARE AWARE OF DISPOSITION OF WORKERS:

WORKER #1	**IS AN ACTUAL TRANSPORT TO ST ANTHONY'S NORTH**
WORKERS #2, 3, 4, & 5	**ARE SIMULATED TRANSPORTED TO UNIVERSITY HOSPITAL. THE WORKER SHOULD ACTUALLY BE TRANSPORTED TO THE EXERCISE CONTROL CELL IN BUILDING T130E.**
WORKER #3	**IS THE MISSING PERSON AND WOULD PROBABLY BE FOUND AND TREATED AFTER THE OTHERS HAVE BEEN TRANSPORTED. THIS WORKER SHOULD BE TRANSPORTED TO OMD, STABILIZED, DECONTAMINATED, AND THEN TRANSPORTED TO UNIVERSITY HOSPITAL. ACTUAL DISPOSITION IS TO BUILDING T130E.**

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 10		**Time: Upon Arrival &Display of Proper Monitoring Techniques**	**H-Hour: 01:00**
From: Controllers # 23, 25, 26, 27, 28, 29, 30, 31		**To: Responding RCTs**	

Subject: Radiological Data and Information Outside of Building 374

THIS IS AN EXERCISE

Levels of Contamination for BEST, RCTs, Fire Fighters, and Others Entering Zones A and B

AREA	RADIATION LEVELS	ELECTRA	LUDLUM
Booties/Boots	From 100,000 dpm/100cm^2 to 25,000 dpm/100cm^2 (see note.)	16,665 cpm to 4200 cpm	25,000 cpm to 6300 cpm
Gloves	60,000 dpm/100cm^2 to < MDA	10,000 cpm to < MDA	15,000 cpm to < MDA

Survey Data for Surface Contamination

- **Zone C** is outside on the south side of Building 374 up to 100 meters.
- **Zone D** is from 100 meters to 900 meters outside of building.
- **Zone E** is from 900 to 3200 meters long and up to 120 meters wide.

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM	IH EQUIP
Zone C	Infinity at open dock door to 2220 dpm/100 cm^2 at 100 meters and up to 10 meters wide.	Off Scale to 370 cpm	Off Scale to 1100 cpm	Actual
Zone D	2220 dpm/100 cm^2 at 100 meters to 220 dpm/100 cm^2 at 900 meters and up to 40 meters wide.	370 cpm to 37 cpm	1100 cpm to < MDA	Actual
Zone E	220 dpm/100 cm^2 at 900 meters to < MDA at 3200 meters and up to 120 meters wide.	37 cpm to < MDA	< MDA	Actual

Area Air Sampling Data Adjacent to Building 374

AREA	TIME	LUDLUM	ELECTRA
At 30 meters	From 0 – 20 minutes (>21)	3800 (600)cpm	1265 (200) ncpm
At 80 meters	From 0 – 20 minutes (>21)	2680 (450)cpm	895 (150) ncpm
At 100 meters	From 0 – 20 minutes (>21)	1920 (300) cpm	640 (100) ncpm

After 21 Minutes of Exercise Initiation

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 3-1	Time: When EMT or RCT Displays Proper Technique	H-Hour: 01:15

From: Controllers # 11 & 25 **To:** EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker # 4

THIS IS AN EXERCISE

If treated for bleeding and shock, THEN:
RESPIRATIONS: 20

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 3-2	Time: When EMT or RCT Displays Proper Technique	H-Hour: 01:15

From: Controllers # 11 & 25 **To:** EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker # 5

THIS IS AN EXERCISE

PULSE; 100
BLOOD PRESSURE: 116/80
RESPIRATIONS: 22

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 11	**C**	**Time: Upon Entry of Reentry Team into Bldg 374**	**H-Hour: 01:20**

From: Controllers # 13 & 19, as appropriate	**To: Emergency Reentry Team Chief**

Subject: Contingency Instructions to Emergency Reentry Team if the Search Appears to Involve the Entire 371/374 Complex

THIS IS AN EXERCISE

SEARCH ONLY THOSE ROOMS ADJACENT TO ROOM 3813

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 12		**Time: Upon Arrival &Display of Proper Monitoring Techniques**	**H-Hour: 01:20**

From: Controller #25, 26, 27, 28, 29	**To: RCT on Emergency Reentry Team**

Subject: RAD Data to Emergency Reentry Team

THIS IS AN EXERCISE

Survey Data for Surface Contamination

During radiological surveys conducted in affected areas/zones around Building 374, inform the Radiological Control Technicians conducting the surveys that the following levels of contamination are present:

- **Zone A** is inside of Room 3813.
- **Zone B** is from the doors to Room 3803, 3809, and 2804 from Room 3813 to a point in each room approximately 10 meters west of the doors.
- **Zone C** is outside on the south side of Building 374 up to 100 meters.

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Zone A	After fire levels not wet or covered by foam are infinity inside Room 3813	Off Scale	Off Scale
Zone B	10,000 dpm/100 cm^2 at doors to 2000 dpm/100 cm^2 at 10 meters from the doors from Room 3809	1665 cpm to 335 cpm	2500 cpm to 500 cpm
Zone C	Infinity at open dock door to 2220 dpm/100 cm^2 at 100 meters and up to 10 meters wide.	Off Scale to 370 cpm	Off Scale to 1100 cpm

All Beta, Gamma, and Neutron readings, if taken, will be "as read."

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 13		**Time: Upon Arrival &Display of Proper Monitoring Techniques**	**H-Hour: 01:20**
From: Controllers 30 & 31		**To: FST Chief**	
Subject: RAD Survey Results of Field Sampling			

THIS IS AN EXERCISE

Field Sampling Team (FST)Air Sampling Data Based On Zones And Time

Data Basis: *All samples are based on a 10 cubic foot sample with a 4-inch filter media during the plume passage. All samples are taken with the H810DC sampler with a flow rate of 5 cfm. Assumes all samples will be counted with a Bicron Frisk-Tech with the A-100 probe with a background of 1 cpm.

AREA	AIR SAMPLE	BICRON FRISK-TECH	TIME
Zone A At 30 meters	*Based on above sample parameters	128 gross cpm	Any time after incident due to re-suspension.
Zone A At 80 meters		90 gross cpm	
Zone B At 100 meters	*Based on above sample parameters	64 gross cpm	After 20 minutes Report <MDA
Zone C At 500 meters	*Based on above sample parameters	13 gross cpm	After 30 minutes Report <MDA
Zone D At 1000 meters	Data is based on a 10 minute sampling time.	23 gross cpm	From 9 to 39 After the start of the fire.
Zone E At 1800 meters	Data is based on a 10 minute sampling time.	14 gross cpm	From 16 to 46 minutes after the start of the fire.
Zone F At 3800 meters	Data is based on a 10 minute sampling time.	< MDA	< MDA

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: **MED 4-1**		Time: When EMT Displays Proper Technique	H-Hour: 01:45

From: Controller #11 & 25	To: EMT & RCT Attending

Subject: Medical Status and Injuries for Worker #3

THIS IS AN EXERCISE

- **Female, approximately 30 years of age.**
- **Cause of Injuries: Blunt trauma to the head after fall.**
- **Physical Signs/Symptoms: Open 3" laceration to the scalp with significant hemorrhaging. Possible concussion. Pupils are unequal and slow to react. Patient is conscious but shows signs of confusion and disorientation to the surroundings and when questioned. (Name, day of week, birthday, etc.)**
- **Pulse: 100**
- **Blood Pressure: 110/62**
- **Respiration's: 12**

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: **MED 5-1**		Time: When EMT or RCT Displays Proper Technique	H-Hour: 01:50

From: Controllers # 43 & 33 | **To:** EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker #3

THIS IS AN EXERCISE

PULSE: 120
BLOOD PRESSURE: 120/56
RESPIRATIONS: 12

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: MED 6-1	Time: When EMT or RCT Displays Proper Technique	H-Hour: 02:00

From: Controllers # 43 & 33	To: EMT or RCT Attending

Subject: Follow-Up Medical Status, Injuries, and Contamination Levels for Worker #3

THIS IS AN EXERCISE

PULSE: 124
BLOOD PRESSURE: 124/54
RESPIRATIONS: 16

Levels of Contamination for Injured Personnel

AREA	CONTAMINATION LEVELS	ELECTRA	LUDLUM
Face	1140 dpm	190 cpm	285 cpm *
Hair	5700 dpm	950 cpm	1425 cpm
Hands	30400 dpm	5065 cpm	7600 cpm
Clothing	30400 dpm	5065 cpm	7600 cpm

THIS IS AN EXERCISE

EXERCISE MESSAGE/INJECT

Message/Inject #: 14	**C**	**Time: IF Member of Interior Sector Monitors with PID**	**H-Hour: 00:30+**

From: Controllers # 19 & 20 **To:** Fire Dept Member with PID

Subject: Contingency Message if Fire Dept Monitors for Airborne Hazardous Materials Contamination

THIS IS AN EXERCISE

TIME	LOCATION	IH PID READINGS
1-20 minutes after fire out	At B&W drum bung opening	Over range
	1-20' from B&W drum	200-1000 ppm
	20-30' from B&W drum	50-200 ppm
	At Door to room	Fluctuating 1-50 pm
	Bldg Exterior	0 ppm
20-40 minutes after fire out	At B&W drum bung opening	500 ppm
	1-20' from B&W drum	10-350 ppm
	20-30' from B&W drum	1-10 ppm
	At Door to room	0-1 ppm fluctuating
	Bldg Exterior	0 ppm
40 minutes to end	At drum opening	100 ppm
	1-3' from drum opening	1-10 ppm fluctuating
	>3' from drum opening	0 ppm
	Bldg Exterior	0 ppm

NOTE 1: Use actual readings for any instrumentation used other than a PID.
NOTE 2: IF drum opening is sealed, all readings drop to zero.

THIS IS AN EXERCISE

APPENDIX 4

EXERCISE PUBLIC INFORMATION AND MEDIA MESSAGES

(Published Under Separate Cover)

APPENDIX 5

CHRONOLOGY OF KEY EVENTS AND OBSERVATIONS

READY - 2000
CHRONOLOGY OF KEY EVENTS AND OBSERVATIONS

Evaluators Name:_____Organization:_____Phone _____

Functional Area Evaluated:_____Assigned Location/Area:_____

Name of Exercise:_____Time: _____ to _____ Date:_____

Time	Key Event or Observation

Page ____of____

READY - 2000
CHRONOLOGY OF KEY EVENTS AND OBSERVATIONS

Time	Key Event or Observation

READY - 2000
CHRONOLOGY OF KEY EVENTS AND OBSERVATIONS

Time	Key Event or Observation