INL/EXT-14-33839
Revision 0

After Action Report: Idaho National Laboratory (INL) 2014 Multiple Facility Beyond Design Basis (BDBE) Evaluated Drill October 21, 2014

December 2014

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Idaho National Laboratory
Idaho Falls, Idaho 83415

http://www.inl.gov

Prepared for the
U.S. Department of Energy
Under DOE Idaho Operations Office
Contract DE-AC07-05ID14517

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Emergency Management

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December 2014

Submitted by Scott Barnes
Drill Director

12-8-14
Date

Approved by Carl Farmer
INL Emergency Management Manager

12-08-2014
Date

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TABLES

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ACRONYMS

AMWTP	Advanced Mixed Waste Treatment Project
ATR	Advanced Test Reactor
AW	area warden
AWC	area warden coordinator
BDBE	beyond design basis event
BEA	Battelle Energy Alliance, LLC
BHS	Bureau of Homeland Security (Idaho)
CAM	constant area monitor
CFA	Central Facilities Area
CWI	CH2M-WG Idaho, LLC
D&D	Decontamination and Decommissioning
DOE	Department of Energy
DOE-ID	Department of Energy Idaho Operations Office
EAL	emergency action level
EAM	emergency action manager
ECC	emergency control center
ED	emergency director
EMS	Emergency Medical Services
EOC	emergency operations center
ERO	emergency response organization
ESRB	Executive Safety Review Board
FAC	Fire Alarm Center
FMT	Facility Monitoring Team
FMTC	Facility Monitoring Team Coordinator
GE	general emergency
IC	incident commander
IMC	information management coordinator
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
ISIH	industrial safety industrial hygiene
ITG	Idaho Treatment Group
IWTU	Integrated Waste Treatment Unit
JIC	Joint Information Center

KI	potassium iodide
MFC	Materials and Fuels Complex
MRT	medical response team
NARAC	National Atmospheric Release Advisory Center
NFM	nuclear facility manager
OE	operational emergency
PA	protective action
PAL	personnel accountability leader
PAR	protective action recommendation
RadCon	Radiation Control
POV	personally owned vehicle
RAM	radiation area monitor
RAP	Radiological Assistance Program
RWMC	Radioactive Waste Management Complex
SAE	site area emergency
SMC	Specific Manufacturing Capability
SMT	site monitoring team
SMTC	site monitoring team coordinator
SS	shift supervisor
TAN	Test Area North
VP	vice president
WCC	Warning Communications Center
WGT	Work Group Task

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1. PURPOSE

On October 21, 2014, Idaho National Laboratory (INL), in coordination with local jurisdictions, and Department of Energy (DOE) Idaho Operations Office (DOE-ID) conducted an evaluated drill to demonstrate the ability to implement the requirements of DOE O 151.1C, "Comprehensive Emergency Management System" when responding to a beyond design basis event (BDBE) scenario as outlined in the Office of Health, Safety, and Security Operating Experience Level 1 letter (OE-1: 2013-01). The INL contractor, Battelle Energy Alliance, LLC (BEA), in coordination with CH2M-WG Idaho, LLC (CWI), and Idaho Treatment Group, LLC (ITG), successfully demonstrated appropriate response measures to mitigate a BDBE event that would impact multiple facilities across INL while protecting the health and safety of personnel, the environment, and property. Offsite response organizations participated to demonstrate appropriate response measures.

Report data were collected from multiple sources, which included documentation generated during exercise response, player critiques conducted immediately after terminating the exercise, personnel observation sheets, and evaluation critiques.

Evaluation of this exercise served as a management assessment of the performance of the INL Emergency Management Program (IAS15559).

This report documents the scope of the drill, the objectives that were evaluated, and the opportunities for improvement and issues that were identified during the drill.

2. SCOPE

Participants and their extent of play are shown in Table 1.

Table 1. Participants and extent of play.

Participants	Extent of Play
INL/BEA Organizations	
Advanced Test Reactor (ATR) Complex	Full participation
Central Facilities Area (CFA) Emergency Control Center (ECC)	Full participation
INL Bus Operations	Full participation
INL Emergency Operations Center (EOC)	Full participation
INL Fire Alarm Center	Full participation
INL Fire Department	Full participation
INL Joint Information Center (JIC)	Full participation
INL Occupational Medicine	Full participation
INL Security	Full participation

Table 1. (continued).

INL Site Monitoring Team	Full participation
INL Warning Communications Center (WCC)	Full participation
Material and Fuels Complex (MFC) ECC	Limited: Control cell
Specific Manufacturing Capability (SMC)	Full participation
CH2M-WG Idaho, LLC (CWI)	
Idaho Nuclear Technology and Engineering Center (INTEC)	Full participation
Radioactive Waste Management Complex (RWMC)	Full participation
Idaho Treatment Group, LLC (ITG)	
Advanced Mixed Waste Treatment Project (AMWTP)	Full Participation
Contiguous Counties	
Bingham	Limited: Notifications only
Bonneville	Limited: Notifications only
Butte	Limited: Notifications only
Clark	Limited: Notifications only
Jefferson	Limited: Notifications only
Federal Agencies	
DOE-ID	Full participation
Radiological Assistance Program (RAP)	Full participation
National Atmospheric Release Advisory Center (NARAC)	Full Participation
Idaho Bureau of Homeland Security	Full Participation
State of Idaho Agencies	
INL State Oversight Program	Full participation
Idaho State Communications Center	Limited: Notifications and communications
Idaho State Police	Limited: Notifications only
Tribal Authority	
Shoshone/Bannock Tribe	Limited: Notifications only

3. DRILL SUMMARY

Background

It was a normal work day at all INL facilities. Normal work activities were beginning at the start of the day.

Start

At approximately 0800, it was simulated that an earthquake occurred on the Lost River fault with a magnitude of 7.5. Standing waves moved across INL and strong ground shaking occurred at all INL facilities. In-town facilities were not impacted. As a result, significant damage occurred at several facilities resulting in injuries to personnel and releases of radiological and hazardous material at various facilities. Some road damage was reported restricting passage around and within INL requiring emergency response organization (ERO) personnel to determine alternate routes of travel.

Phone calls were received in the INL Fire Alarm Center (FAC) and Warning Communications Center (WCC). INL Fire Department (FD) and Emergency Medical Services (EMS) began their response actions. Facility EROs across INL were activated in conjunction with the emergency operations center (EOC) and the Joint Information Center (JIC) in accordance with applicable procedures and protocols. Protective Actions (PAs) were determined and implemented as needed. Operational Emergencies (OE) were declared and offsite notifications were made. An evacuation of Advanced Test Reactor (ATR) non-essential personnel occurred with personnel being loaded on evacuation buses and transported to Central Facilities Area (CFA), which is about 4 to 5 miles upwind from ATR. The emergency director (ED) coordinated offsite notifications as applicable. An area command was established by INL FD personnel and priorities determined and available resources allocated accordingly.

An aftershock was simulated as occurring off of the southern tip of the Lost River fault with a magnitude of approximately 6.5 that caused power, Internet, and telephone communications to be lost to most INL site facilities for about 20 minutes. Radio use was limited to “point-to-point” communications during this time. Cell phones and satellite phones were available and effectively used during the drill. During this time, it was determined the ATR canal was draining at a faster rate than could be maintained. ATR personnel responded and utilized INL FD personnel to begin emergency fill procedures. A general emergency (GE) was declared and protective actions/protective action recommendations (PAs/PARs) for other INL facilities were determined and implemented. This occurred during the loss of landlines and caused delays in disseminating the PARs to the other INL facilities. ATR had already evacuated non-essential personnel by this time and Idaho Nuclear Technology and Engineering Center (INTEC), which is the next closest facility, had initiated an evacuation due to a release at their facility. A simulated evacuation of CFA, Radioactive Waste Management Complex (RWMC), and Advanced Mixed Waste Treatment Project (AMWTP) also occurred so personnel were not transported. All other facility evacuations were simulated. Eventually, it was determined to evacuate all personnel within the recommended distance. Effective communication occurred between EOC staff and offsite agencies including INL State Oversight and the regional Radiological Assistance Program (RAP) team. The RAP team and INL State Oversight personnel continued their portion of the drill after the INL drill was terminated in a table-top forum. INL consequence personnel attended and assisted by providing information as needed.

Consequence assessment personnel in the EOC, in conjunction with National Atmospheric Release Advisory Center (NARAC) personnel, developed plume projection models. The INL Site Monitoring Team (SMT) was deployed to take samples and report the information to the EOC consequence assessment team. Facility monitoring teams (FMTs) were deployed at ATR, INTEC, and AMWTP with release information reported back to facility ECCs to assist in the verification of release information and ensure PAs were adequate. INL consequence assessment teams, INL State Oversight, along with Idaho Bureau of Homeland Security (BHS) were proactive in determining offsite PARs.

Some injured personnel were transported to CFA medical with offsite transports being simulated. Facilities that could not be reached by emergency medical services (EMS) personnel determined and utilized “self-help” to assist with the treatment and transport of injured personnel.

ERO personnel worked effectively in determining evacuation routes based on road conditions. As the drill scenario progressed, commercial power was restored, the downed power lines were moved, and a safe egress route was used to simulate evacuating the INL site.

Reentry planning was discussed with reentry planning being successfully demonstrated. Recovery managers were identified for each facility. EOC personnel had a good discussion about providing a recovery manager for the entire event using an overall view with each facility addressing individual facility need.

Press releases were developed in the EOC, reviewed and approved by the appropriate personnel within the EOC, and provided to the JIC. The JIC fielded calls that were received from personnel representing other media agencies and concerned citizens. Rumors were effectively addressed and corrected as they were identified.

The drill was terminated when it was determined that all objectives had been or attempted to be met. The drill windows were closed at each facility, and hot-wash critiques were held.

4. DRILL OBJECTIVES AND EVALUATION

During the exercise, the 16 standardized INL objectives were evaluated for INL and subcontractor EROs using the appropriate demonstration criteria. Eleven objectives were rated fully satisfactory, three objectives were rated satisfactory with improvement needed, and two objectives were rated as an area of weakness.

The ratings in Table 2 are based on the observations that follow in Section 5. The gray shading within Table 2 represents an area not observed or rated.

Table 2. Evaluation matrix.

Participant	Objectives[1]															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AMWTP ECC	I		I	W		I				I	I	I	I			S
ATR ECC	I		S	I	S	W		I		S	I			I	S	S
CFA ECC	S		S	S	S	I		S	S	S	I			S	S	S
INL EOC	S	S	S	I	S	S	S	S	S	S	S	S		S	S	S
INL FAC										S	S	S	S			S
INL Fire Department										S	I	S	I			S
INL JIC	S						S				S	S				S
INL Occupational Medical Program										S	I	S				S
INL Security									S	S	S					S
INL WCC	S	S		I		I	S		S	S	S					S
INTEC ECC	W	S	S	I	S	I	S	S	S	I	I			S	S	S
MFC ECC			S	S		S				S	S	S		S	S	S
RWMC ECC	S	S	S	S	S	S	S	S	S	S	S	S	S	S		S
SMC ECC	S		S	S	S	I			S	I	I	S	S	S	S	I
Overall	I	S	S	W	S	W	S	S	S	S	I	S	I	S	S	S

[1] Objectives:
1. ERO response
2. Offsite response interfaces
3. Emergency event categorization and classification
4. Notifications
5. Consequence assessment
6. Protective actions
7. Public information
8. Monitoring team activities
9. Security measures
10. Emergency facilities and equipment
11. Communications
12. Medical
13. Fire and rescue
14. Reentry
15. Recovery
16. Drill/exercise conduct

[2] Ratings:
S = Satisfactory
I = Satisfactory with improvement needed
W= Weakness
D = Deficiency

5. BEA/INL DRILL ISSUES AND OPPORTUNITIES FOR IMPROVEMENT

The following issues are specific to the evaluation of INL/BEA response actions. CWI issues are found in Section 6 for INTEC facility issues and Section 7 for issues associated with the RWMC facility. ITG issues for the AMWTP facility are found in Section 8. Each item has been evaluated and entered into the applicable issues management system.

5.1 Emergency Response Organization Response

Given the facility procedures/plan, the ERO will respond to, monitor, and evaluate the specific indicators of an emergency for mitigation of the consequences and bring the emergency situation under control.

Discussion

Overall ERO response personnel demonstrated satisfactory performance of their duties. Some opportunities for improvement were identified and are noted below.

When the drill began, INL facility emergency action managers (EAM) recognized the need to activate their respective ECCs. Applicable procedures and checklists were utilized to activate ERO response personnel including technical staff as needed. Some facilities used voice paging systems for the initial activation of their ERO and made follow-up calls to the WCC to activate their ECCs, while others called the WCC to initiate the activation. At one facility, the EAM did use the word "activated" when declaring the ECC "operational." The INL ED used the WCC to activate the EOC and the JIC. Activation equipment functioned as designed. All ERO teams were staffed in a timely manner and declared operational when minimum staffing levels were met.

EROs effectively used established procedures to respond to the emergency event. Event logs were utilized and maintained throughout the event response. Information was documented and transmitted within and between ECCs and the EOC. Data was obtained and analyzed to support ERO staff in ensuring adequate PAs were in place and that appropriate mitigation activities could be planned. The EOC consequence assessment specialist utilized NARAC to verify plume projections and to display plumes from multiple release points.

Periodic briefings occurred within each ECC and the EOC. Command bridge briefings were conducted so that applicable decision makers could share event information. Tasks were assigned within the ECCs and the EOC and actions were taken to carry out the completion of assignments.

Command and control was effectively demonstrated within each ECC and the EOC with overall response activities being coordinated by the ED. EAMs demonstrated knowledge of their respective facility and its operations and with the ERO response capability. Incident Commanders (ICs) at each event scene were utilized and maintained effective control with the INL FDs area command and the affected facility ERO. Personnel safety and accountability was a primary concern of ERO response personnel. Applicable response procedures and protocols were followed. ERO personnel effectively demonstrated their knowledge of their roles and responsibilities and how to use necessary equipment in completing their assigned functions.

Opportunities for Improvement

INL/BEA

1. A new procedure, EPI-113, "Area Command," was used during this drill. Initial training was limited to EAMs and EDs in preparation for using the procedure. As a result, some requests made in regards to Life Safety hazards were confusing and distracted from the response in the ATR ECC. Some ATR ERO personnel did not know what area command was or what was meant by Life Safety hazards requests made by area command. EPI-113 is not included in the EPI manual for the ATR. No advance training was provided to the rest of the ERO for the implementation of area command.

   Recommended Corrective Action 1: EAMs and EDs will do a required read of EPI-113, "Area Command." **Laboratory Protection LabWay No. LP-CO-2014-0800** assigned.

   Recommended Corrective Action 2: Review current training and determine if updates need to occur and complete as needed. **Laboratory Protection LabWay No. LP-CO-2014-0801** assigned.

2. Forms used to gather event information within the ECCs need to be evaluated to ensure they require the needed information, such as fuel tank levels. In some cases, forms need to be formalized and issued as controlled documents.

   Recommend Corrective Action: Evaluate the forms used in the ECCs for gathering event information and (1) make a determination on which forms need to be formalized and added to the control document system, (2) verify that the forms require the needed information such as fuel tank levels, and (3) evaluate adding the identified ATR forms to EPI-112 "ATR Complex ERO Integrated Response." **Laboratory Protection LabWay No. LP-CO-2014-0802** assigned.

3. ATR protective force did not participate in the drill. This detracted from play, information flow in the command room, and accountability. They were not exempted from play prior to the drill beginning.

   Recommended Corrective Action: Remind drill directors and lead controllers to verify critical organization participation in drills prior to the start of the drill. **Laboratory Protection LabWay No. LP-CO-2014-0803** assigned.

4. A seismic response procedure does not exist at ATR.

   Recommended Corrective Action: ATR Operations needs to evaluate the need for, develop, and implement a seismic event response procedure for the ATR if it is determined that one is needed. **ATR LabWay No. CO-2014-5529** assigned.

5. On-scene command at ATR with the INL FD, Radiation Control (RadCon), and Incident Response Team (IRT) needs to be practiced and improved.

   Recommended Corrective Action: ATR will conduct a series of training drills that will allow the INL FD, ATR RadCon personnel, and the ATR IRT opportunities to practice on-scene communications and command and control principles. **Laboratory Protection LabWay No. LP-CO-2014-0804** assigned.

6. Some confusion occurred during the drill as to the role of the ATR shift supervisor (SS) and shift operating crew after they relocated to the ECC.

   Recommended Corrective Action: Evaluate the role of the ATR SS and shift operating crew after relocating to the ECC and formalize the responsibilities and functions. Revise EPI-112, "ATR Complex ERO Integrated Response," to include these roles and responsibilities as identified. **Laboratory Protection LabWay No. LP-CO-2014-0805** assigned.

7. At one point, the ATR EAM declared the ATR ECC "activated" when he meant "operational"

   Recommended Corrective Action: Remind ERO personnel the difference between "activation/activated" and "operational." **Laboratory Protection LabWay No. LP-CO-2014-0806** assigned.

8. A method needs to be established to control entry into the ATR ECC and ensure personnel entering the ATR ECC have been surveyed if the event involves a radiological release.

   Recommended Corrective Action: Evaluate need and update, as necessary, the ATR ECC activation procedure, EPI-6, "Advanced Test Reactor Complex Emergency Response Organization Activation," and EPI-112, "ATR Complex Integrated Response," to address establishing controlled entry and surveying of personnel entering the ECC during radiological release events or conditions. **Laboratory Protection LabWay No. LP-CO-2014-0807** assigned.

Issues

- No issues were identified.

5.2 Offsite Response Interfaces

Given the facility procedures/plan, the ERO will coordinate and interface with response organizations to protect the environment and health and safety of the public.

Discussion

Predesignated offsite points of contact including organization and telephone numbers were available to the emergency response personnel. INL State Oversight, Idaho BHS, and RAP personnel participated in this drill. During the BDBE drill, applicable event information was exchanged between ERO personnel and offsite officials that were effective and enhanced the overall response. Necessary equipment was available for communication with offsite officials.

Offsite services, such as fire and medical, were simulated during this drill but information and procedures were in place and available to request any additional assistance necessary to augment onsite resources.

Though not part of this evaluation, a follow-up/continuation table top of the drill was completed offsite with INL State Oversight and RAP personnel participating to better enhance their communication efforts. INL EOC personnel observed the table top and provided information as need to enhance the drill.

Opportunities for Improvement

1. During the drill, some communications were simulated by INL State Oversight, such as talking to Idaho Transportation Department and Idaho State Police. It was not communicated to the ED that these activities had occurred whether simulated or not. A better coordination between players when actions are simulated as occurring would assist the ED in his decision making process by knowing what other resources had been contacted.

   Recommended Corrective Action: Remind offsite agencies during controller or player briefings to provide the ED with event information whether it was simulated as occurring or actually performed so responders can more effectively respond to the event. **Laboratory Protection LabWay No. LP-CO-2014-0808** assigned.

Issues

- No issues were identified.

5.3 Emergency Event Categorization and Classification

Given the facility procedures/plan, the ERO will accurately and promptly categorize and classify the OE.

Discussion

When initial event conditions were provided to each participating EAM and the ED, each facility EAM recognized the severity of the event and effectively categorized and classified as applicable the event using the correct emergency action level (EAL) within the required 15 minutes of event recognition. As event conditions changed, appropriate EALs were used to upgrade the event. Transfer of categorization and classification was discussed with each facility keeping the responsibilities for categorization and classification. Eventually as the event went along, the SMC EAM transferred categorization and classification for their facility to the ED.

Opportunities for Improvement

1. During multiple facility events affecting only BEA facilities, BEA procedures provide guidance for all facility EAMs to transfer categorization and classification to the ED. The ED declares the event at the highest level and only one notification form is issued. During the development and conduct of this drill, it was evident that this same process does not exist when dealing with multiple contractors at INL. If multiple facilities declare different OEs, offsite agencies could become confused as to what is really occurring at INL and what their response should be.

   Recommended Corrective Action: Evaluate the possibility of having the ED accept and/or assume categorization and classification of multiple facility events that affect multiple contractors, and if feasible, get needed approvals, update necessary procedures and documentation, and implement the process. **Laboratory Protection LabWay No. LP-CO-2014-0809** assigned.

2. Documentation of categorization and classification in WebEOC by some facilities was slow with some EALs not being listed at all.

   Recommended Corrective Action: Using the guidance in EPI-82, "Emergency Information Management System," provide ERO personnel a lessons learned reminder of the importance of documenting significant events such as the time the event was declared an OE, what EAL was used, and what PAs have been implemented in WebEOC. **Laboratory Protection LabWay No. LP-CO-2014-0810** assigned.

3. At ATR, the EAM and the support manager were discussing declaring an alert based on canal level before the function and authority of EAM had formally been transferred by the SS in the simulator to the ATR EAM in the ECC.

   Recommended Corrective Action: Remind ATR EAMs of the process in declaring OEs and the importance of waiting until the authority or function has been formally transferred to them by the SS. **Laboratory Protection LabWay No. LP-CO-2014-0811** assigned.

Issues

- No issues were identified.

5.4 Notifications

Given the facility procedures/plan, the ERO will report emergencies and conduct follow-up notifications to the appropriate organizations within the required time.

Discussion

Each activated facility completed an initial notification form and submitted it to the WCC as instructed per procedures. WCC received the initial notification form from ATR first and used it to initiate and complete the initial offsite notification process. The event at ATR was declared an OE at 0802 with initial notifications completed at 0822. As the WCC received other facility notification forms, the ED was notified and he assumed responsibilities for INL notifications and notified the affected facilities. At that time, all notifications were rolled into one form with the INL BDBE EAL being added and submitted to the WCC. All follow-up offsite notifications were simulated by the WCC. As event conditions changed and additional EALs met, the ED was notified by phone and notification forms, wherein he made applicable adjustments to follow-up notifications.

It is noted that during multiple facility events like the BDBE, the fax machines become backlogged with forms sent from the WCC and stored in the fax machine memory. During the BDBE drill, some forms were still printing approximately 4 to 5 hours after the drill had been terminated. If a facility is relying on the notification form to provide PAs/PARs information, the effected personnel might not get the information for several hours into the event. Since only the initial and termination notification forms were sent to offsite agencies, it is not known if their fax machines were backlogged also. But in an event of this nature, we have to consider the ramifications of an offsite agency not receiving a form. Though we rely on verbal notification, the form is a method to document what was relayed on the phone.

Environmental notifications were made to applicable personnel following procedures and checklists with offsite environmental notifications being simulated.

The next of kin notification process was practiced following each of the INL contractor's procedures and processes. BEA only practiced the process to the point where the medical director was required to notify human resources, at which time the process was simulated. The other contractors proceeded to various points in their process and applicable improvements are identified in the applicable appendixes.

Opportunities for Improvement

1. A review of the forms indicated that some information was missing or had incorrect information. At ATR, the ATR Simulator SS failed to properly complete the initial and follow-up notification forms. An incorrect PA for INL was selected on the initial notification, and the follow-up notification form was returned twice before it was completed correctly. Another example occurred when personnel used an "Initial Emergency Notification Form" to consolidate all notifications into one form. This could lead to confusion for the offsite agencies receiving the form as to whether this is a new event or the continuation of the previous event(s).

   Recommended Corrective Action: Remind applicable ERO team personnel responsible for completing and reviewing notification forms of the importance of using the correct form, getting the correct information on the forms, and verifying all blocks are completed correctly. **Laboratory Protection LabWay No. LP-CO-2014-0812** assigned.

2. The support manager at the ATR ECC did not attach the ATR EAL page to the notification form. This would have provided offsite agencies a hard copy of the recommended actions to take in response to the GE declaration and associated PAs/PARs. The notification procedure and protective action procedure do not provide guidance on how to accomplish attached pages.

   Recommended Corrective Action 1: Review the ATR SS checklist and verify that it provides direction for attaching copies of the EALs to the notification form and update as necessary. **Laboratory Protection LabWay No. LP-CO-2014-0813** assigned.

   Recommended Corrective Action 2: Remind all EOC support directors to be aware of and look for attached EALs during large scale events at ATR that identify site area emergency (SAE) and GE EALs. **Laboratory Protection LabWay No. LP-CO-2014-0814** assigned.

   Recommended Corrective Action 3: Evaluate EPI-9, "Emergency Event Notifications," and EPI-15, "ATR Complex Operational Emergency Categorization/Classification and Protective Actions," and provide recommended updates to the emergency management issues screening committee that will address how to handle and transmit attached pages such as EALs that are attached to notification forms. **Laboratory Protection LabWay No. LP-CO-2014-0815** assigned.

   Recommended Corrective Action 4: Update each remaining BEA facility-specific EPI pertaining to "Operational Emergency Categorization/Classification and Protective Actions" using the wording approved for use in EPI-15. **Laboratory Protection LabWay No. LP-CO-2014-0816** assigned.

Recommended Corrective Action 5: Recommend other INL contractors update their applicable notifications procedures based on changes to EPI-9 and EPI-15. **Laboratory Protection LabWay No. LP-CO-2014-0817** assigned.

3. The EOC support director has the responsibility to remind the WCC to make announcements on the INL radio system approximately once per hour to update all INL facilities on the event. During this evaluated drill, only one announcement was made, all other announcements were simulated. This potentially caused some players to not be appraised of event condition changes, for example when ATR EAM declared a GE. Having this information sooner might have caused EAMs at other facilities to respond differently.

   Recommended Corrective Action 1: Remind emergency planners when they are developing drills/exercises involving multiple facilities like the BDBE drill, to carefully review and limit simulations, such as making radio announcements on event status that might impact other facility decision makers' actions to maintain event realism as much as possible and to coordinate response actions. Any simulations that are to be simulated by the WCC are to be included in the drill package and on the appropriate cue cards. **Laboratory Protection LabWay No. LP-CO-2014-0818** assigned.

   Recommended Corrective Action 2: Ensure that WCC personnel understand they are to make INLEN_D radio announcements and other activities they would normally perform during an event when participating in drills unless specifically directed to simulate the activity. **Laboratory Protection LabWay No. LP-CO-2014-0819** assigned.

4. Some confusion existed when the ED accepted and assumed the notification function on how information was to be relayed to the ED. Some ERO personnel thought they needed to only call the EOC support director and provide event updates for their facility. Others thought they could just send in a new notification form, and some did a combination of the two. In addition, the first time facility ERO personnel called the EOC, EOC personnel were not sure why they were getting the call instead of the WCC. This was quickly resolved, but it was apparent for events, such as a BDBE, no documented formal process is in place for this process.

   Recommended Corrective Action 1: Evaluate the process of transferring the notification responsibility during BDBE or multiple facility events and multiple contractor events. Determine and obtain any approvals needed to have the ED accept notification responsibilities for non-BEA contractors during BDBE or multiple facility/multiple contractor events. Update the procedures and training as needed, and provide as a minimum lessons learned to applicable ERO team personnel. **Laboratory Protection LabWay No. LP-CO-2014-0821** assigned.

   Recommended Corrective Action 2: Evaluate the notification forms and determine if a block needs to be added to Section 4 of Form 150.06, "INL Initial Emergency Notification Form," and/or Section 4 of Form 150.06A, "INL Follow-Up Notification Form," that would indicate the event is a BDBE or multiple facility event. **Laboratory Protection LabWay No. LP-CO-2014-0822** assigned.

5. Fax machines used to receive notification forms at some INL facilities were still printing forms 4 to 5 hours after the drill was terminated.

   Recommended Corrective Action 3: Evaluate the notification process and determine if there is a viable electronic process that can be utilized to provide notification forms to offsite agencies and onsite ECCs. Present findings to the emergency management issues screening committee, and if approved, conduct a series of trial runs to verify functionality, capability, and reliability for use during OEs. If the process is approved for implementation and use, update applicable training and provide training to applicable ERO personnel and offsite agency personnel. **Laboratory Protection LabWay No. LP-CO-2014-0824** assigned.

5.5 Consequence Assessment

Given the facility procedures/plan, the ERO will assess actual and potential onsite and offsite consequences of an emergency.

Discussion

An initial assessment of consequences of the emergency was made utilizing default source term and/or hazards assessment data. This was accomplished by each activated facility using EALs that integrate the process of categorizing an event as an OE, determining the applicable emergency classification, PA decision making, and projections of onsite and offsite consequences. Facility personnel monitored the event by watching specific indicators to assess the safety and health of personnel, consequences to the environment, and security conditions that might affect the emergency. Information was provided to the consequence assessment team in the EOC, which was continuously updated and verified that applicable PAs were adequate. Consequence assessment results were shared with personnel from INL State Oversight, Idaho BHS, and RAP.

Ongoing consequence assessment was successfully conducted using updated source term information from the facilities, the FMTs, the SMT, and the assistance of NARAC. Information was provided from the facilities to the EOC using applicable process and forms. Consequence assessment information, including plume projections, was shared with INL State Oversight and results were compared, and it was noted the models were very similar. NARAC provided a valuable tool with their ability to provide plume projections from two different release points, a capability INL does not have.

Opportunities for Improvement

INL/BEA

1. For ATR personnel to determine the level of the ATR canal, personnel had to enter the area to determine the status.

   Recommended Corrective Action: Determine the need for permanently installed and remotely monitored cameras in the ATR canal area. If appropriate, install the permanent cameras in the canal area. Assign to ATR Operations. **ATR LabWay No. CO-2014-5531** assigned.

2. Plume plot availability to the ECCs was slow. Providing plume plot(s) in a timely manner helps the ERO understand the adequacy of default PAs in the EALs or to identify the need to take additional PAs.

   Recommended Corrective Action: INL hazard assessors will evaluate and determine if there are process improvements that can be made to streamline the process to decrease the time in providing and/or posting plume projections so ERO staff can see them in a more timely manner, present findings to the BEA emergency management ISC for review, and when approved implement as necessary, including training as applicable. **Laboratory Protection LabWay No. LP-CO-2014-0825** assigned.

3. Consequence assessment forms being used by INL contractors are all different and require different information. These forms need to be standardized so the consequence assessment specialists in the EOC do not have to search for the information they need to successfully complete on-going consequence assessment activities.

   Recommended Corrective Action: INL consequence assessors will lead a team comprised of a representative from each facility, including other contractors. They will develop a new consequence assessment form that meets the needs of each facility and the consequence assessment team in the EOC. This consolidated form should have a place for the declared EAL and the PA/PARs that have been implemented. **Laboratory Protection LabWay No. LP-CO-2014-0827** assigned.

4. During the BDBE drill, the consequence assessment team did not communicate back to the facilities that based on the information provided, the EAL had been verified and/or concurred with, or that the PA/PARs were adequate for the event.

   Recommended Corrective Action: Evaluate applicable procedures and checklists to ensure a process is in place to remind the hazard assessor to provide PA/PAR and EAL concurrence/confirmation information back to the facility ERO and the ED. **Laboratory Protection LabWay No. LP-CO-2014-0828** assigned.

5.6 Protective Actions

Given the facility procedures/plan, the ERO will respond to emergency conditions to protect onsite personnel and the public by implementing specific, predetermined actions.

Discussion

Initial predetermined PAs were quickly and effectively implemented at each facility using applicable procedures, processes, and equipment. Sheltering in place was effectively utilized and when the event progressed and consequence assessments determined the need for evacuation at the applicable facilities, these PAs were successfully demonstrated with personnel following designated evacuation routes. Applicable resources were available to control evacuation flow and access to the affected areas. Personnel from ATR were evacuated from the facility, loaded on buses, and moved to CFA. There was some confusion during the requests for the release of buses and the control of evacuees that is discussed below. Appropriate discussion occurred to ensure control of the decontamination of any possibly contaminated personnel, including where to locate the decontamination area. Actual set up of the area and decontamination of personnel was simulated.

Accountability was successfully accomplished in accordance with procedures and processes. Unaccounted for personnel were identified and responders notified so the missing personnel could be searched for. At ATR, evacuation of personnel was completed in 11 minutes. During the evacuation, the Argus card reader failed, which led to accountability personnel successfully using the backup manual system to complete accountability.

Offsite PARs were effectively determined and communicated using appropriate channels to offsite agencies. An evacuation of some offsite communities was recommended with the respective offsite agencies being simulated as contacted.

Opportunities for Improvement

1. At SMC, it was recognized there is not a formal or proceduralized process for notifying CWI personnel that are in the old TAN operations area of the Test Area North (TAN)/SMC area or evacuated to TAN-601. There is not a process to maintain contact or communications with sheltered personnel at SMC.

   Recommended Corrective Action 1: The SMC emergency planner will work with SMC facility management to formulate the process of coordinating notification of TAN/CWI personnel, including placing a process reminder in the EAM position checklist. **Laboratory Protection LabWay No. LP-CO-2014-0829** assigned.

   Recommended Corrective Action 2: The SMC emergency planner will work with SMC facility management and SMC personnel accountability leaders/area wardens (PALs/AWs) to come up with a process to maintain contact with sheltered personnel**. Laboratory Protection LabWay No. LP-CO-2014-0830** assigned.

2. School buses are used for evacuation buses on the back-shift, during weekends, and to move ERO/emergency workers when a complete evacuation is needed. During this drill, it was decided to evacuate all personnel including ERO personnel, security, and INL FD personnel, which would require the use of one of the school buses held back for this purpose. Though this activity was actually simulated, questions arose about the capacity of the school buses and availability of potassium iodide (KI).

   Recommended Corrective Action: Evaluate and determine if school bus capacity and KI availability on school buses used for evacuation needs to be included in EPI-19, "Request and Control of Evacuation Buses." This would assist in determining how many would be needed to evacuate the essential personnel that remain at the ATR. **Laboratory Protection LabWay No. LP-CO-2014-0832** assigned.

3. Evacuation buses departed ATR without a formal transfer of control of the evacuation buses from ATR EAM to CFA EAM per EPI-19, "Request and Control of Evacuation Buses." This could have had accountability implications if the buses left ATR prior to the ATR EAM verifying accountability and then releasing them through a direct communication with the CFA EAM.

   Recommended Corrective Action: Provide lessons learned/refresher training to applicable ATR and CFA ERO personnel to include EAMs and CFA ECC bus operations position personnel on the process for transferring control of evacuation buses per EPI-19. **Laboratory Protection LabWay No. LP-CO-2014-0833** assigned.

4. It was noted that the ATR EALs did not include the authorization of the use of KI. The EALs state: "Consider authorizing potassium iodide," but it takes an additional step to go to the applicable procedure for authorization.

   Recommended Corrective Action: Evaluate having KI authorization embedded in the EAL, including getting the INL medical doctor's approval and changing LWP-14502, "Emergency Administration of Potassium Iodide." **Laboratory Protection LabWay No**. **LP-CO-2014-0834** assigned.

5. Though the evacuation of ATR was completed in 11 minutes, accountability was not completed in the 45-minute time frame. This was a result of a couple of things. First, the ATR ECC card reader did not function as designed and was the primary contributor to the inability to meet the 45-minute limit. Second, ATR protective force personnel did not participate in the drill, which further hindered accountability efforts, and third, the SS did not have a simulator shift roster. Items two and three are drill conduct issues and are addressed elsewhere in this document.

   Recommended Corrective Action: An evaluation of the ATR card reader malfunction should be completed to verify its functionality for long-term use. **Laboratory Protection LabWay No. LP-CO-2014-0835** assigned.

6. When it was determined to evacuate ECCs at INL, it was unclear on where to relocate ERO personnel. CFA-609 is the primary relocation center but during the BDBE this ECC was evacuated also. The area in WCB once designated as the alternate EOC has been changed with the alternate EOC now at CFA-609. All associated WCB assigned room identification has been removed and it is not intended to be used.

Recommended Corrective Action 1: Review EPI-85, "Emergency Control Center/Emergency Operations Center Relocation," and determine if WCB Room 120D and associated rooms will still be used as the second alternate for INL site ECC relocation or if other facilities are to be used and update EPI-85 as appropriate. If it is determined that WCB Room 120D and associated rooms will be used: (1) provide room identification to assist personnel in locating their assigned area, and (2) determine if the needed documentation is available. **Laboratory Protection LabWay No. LP-CO-2014-0836** assigned.

Recommended Corrective Action 2: ATR emergency planner will develop a "Go Kit" that can be readily taken by ATR ECC personnel when they are evacuating the ATR ECC to an alternate location. **Laboratory Protection LabWay No. LP-CO-2014-0837** assigned.

Issues

- The transmittal of PAs/PARs for the GE was not effectively provided to other facilities and offsite agencies. First, there were errors using the notification process. Second, the WCC did not pass on the verbal information after receiving the information from ATR. Third, though PA/PAR information was provided across the planning bridge, it did not result in an effective heightened awareness for the need for action by the receiving facility ERO personnel. Fourth, during multiple facility events like the BDBE, the fax machines become backlogged with forms sent from the WCC and stored in the fax machine memory. During the BDBE drill, some forms were still printing approximately 4 to 5 hours after the drill had been terminated. If a facility is relying on the notification form to provide PA/PAR information, the affected personnel might not get the information for several hours into the event.

  Recommended Corrective Action 1: Evaluate the process for notifying other facilities of PAs/PARs, update applicable procedures and training, and provide training as needed. This should include a review of applicable procedures and modifications, such as refresher or lessons learned training that emphasizes explaining the importance of PA/PARs. The evaluation should include the need for EAMs to talk directly to each other regarding classification changes and not to rely on notification forms. **Laboratory Protection LabWay No. LP-CO-2014-0838** assigned.

  Recommended Corrective Action 2: Provide lessons learned to EAMs/EDs of the importance of not relying on the notification forms to provide PAs/PARs that need to be implemented immediately for large SAEs or GEs. When the GE was declared at ATR, the information was slow in being relayed to the other facilities. **Laboratory Protection LabWay No. LP-CO-2014-0839** assigned.

5.7 Public Information

Given the facility procedures/plan, the ERO will demonstrate an emergency public information program.

Discussion

Public information activated and staffed their positions in a timely manner. The JIC was declared operational and applicable procedures and checklist used. An initial pre-approved news release was distributed to the JIC for distribution to the media that was simulated. Actors were used throughout the drill to call JIC personnel to ask questions and try to start rumors. JIC personnel effectively addressed all questions and concerns. Two additional news releases were developed by public information personnel in the EOC. These were routed to the applicable personnel in the EOC including DOE-ID and security for review and approval. These were provided to personnel in JIC with the release to the media being simulated.

Information was documented and controlled in an effective manner with copies of news releases available to ERO staff. A designated spokesperson was available to represent INL during the news conferences if they were held.

Issues

- No issues.

5.8 Monitoring Team Activities

Given the facility procedures/plan, the ERO will provide facility/site monitoring teams in support of consequence assessment activities.

Discussion

During the BDBE drill, FMTs were effectively used at AMWTP, ATR, INTEC, and RWMC. The SMT was effectively deployed and used during this drill. Teams had the needed equipment and PPE. Checklists and procedures were followed. Applicable information was relayed to the facilities and the EOC. Turn back values for the teams were identified and the teams were made aware of those values.

During this drill, RAP personnel participated in the EOC and continued the drill after the INL portion was completed in a table-top format at the INL State Oversight facility. This coordination was greatly appreciated by all participants.

Opportunities for Improvement

1. Initially at ATR, command and control of the FMT and RadCon room in the ECC was not effective.

   Recommended Corrective Action: Provide stand-alone drills for ATR FMT members, the Facility Monitoring Team Coordinator (FMTC), and personnel in the ATR ECC RadCon room to improve their skills. **Laboratory Protection LabWay No. LP-CO-2014-0840** assigned.

2. GPS coordinates were not provided by the SMT to the site monitoring team coordinator (SMTC). This information was needed by NARAC to verify projected plume plots.

   Recommended Corrective Action: Remind SMT and SMTC personnel to include GPS coordinates when providing and discussing sample/reading location information. **Laboratory Protection LabWay No. LP-CO-2014-0841** assigned.

3. Though coordination between the SMTC and RAP personnel occurred, it could have been more effective. First by ensuring both groups are using the same units of measure. Second, having the SMT provide GPS location data using compatible units with other agencies/responders rather than indicating they are at the corner of an intersection that is easily identified by INL personnel, but not by outside agencies. Third, release data was transmitted by the SMT to the SMTC and available in the EOC, but the SMTC did not relay that information to the RAP representative in the EOC. This information would have been valuable to RAP personnel in determining where to deploy their team(s).

   Recommended Corrective Action 1: Review the units of measure used by the INL FMTs and SMT when collecting rad data and compare it with those needed by RAP and NARAC. Determine if what the INL is using is compatible to their needs and/or easily convertible to what they need. This was accomplished during the follow-up table-top drill that was conducted after the BDBE. RAP personnel, INL State Oversight personnel, and INL consequence assessment personnel attended, and these items were discussed and correction made. This item is considered closed. **Laboratory Protection LabWay No. LP-CO-2014-0842 assigned**.

   Recommended Corrective Action 2: Review the process and the checklist used by the SMT in determining GPS location and compare what units are being used by the SMT/SMTC to those used by RAP and NARAC and ensure they remind the SMT to provide location by latitude and longitude using the correct units. **Laboratory Protection LabWay No. LP-CO-2014-0843** assigned.

Recommended Corrective Action 3: Ensure that the checklist and procedures used by the EOC SMTC remind him/her to share collected data with RAP personnel and other applicable agencies such as NARAC and INL State Oversight. **Laboratory Protection LabWay No. LP-CO-2014-0844** assigned.

Issues

- No issues.

5.9 Security Measures

Given the facility procedures/plan, Security will respond to, monitor, and evaluate the specific indicators of an emergency for mitigation of the consequences and bring the emergency situation under control.

Discussion

During the BDBE drill, INL Security participated and assisted per procedures and protocols for this type of an event. Applicable event information was routed through the captain, who in turn relayed the information to the facility lieutenants and other security personnel as needed. Except for ATR, security personnel responded and assisted with the event to control access and status the event. ATR security personnel did not participate in the drill. This caused some slight delays in getting information to the right people. This is considered an isolated incident and an artifact of the drill. Information was provided to and passed on between the facilities and the EOC. Traffic and access control at the facilities that participated was successfully demonstrated.

Issues

- No issues.

5.10 Emergency Facilities and Equipment

Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.

Discussion

The facilities and equipment are adequate to support emergency response. The activation of the emergency facility and the operation of emergency facility equipment followed the approved procedures. Facility infrastructure equipment including lighting, ventilation, and power was adequate to meet the needs of emergency responders at the facility. Facility response equipment, such as computers and copiers and written material, was adequate and up to date to meet the needs of emergency responders at the facility. The functionality of warning systems including public address systems (except as noted below), siren, and other applicable alarms was successfully demonstrated. Information display systems displayed the appropriate information.

Opportunities for Improvement

1. ATR command room personnel had to leave the command room when they needed to make necessary copies for ERO personnel. A copier in the command room would alleviate the distance to the copier by command room ERO personnel.

   Recommended Corrective Action: Evaluate placing a copier in the ATR command room and provide one if available. **Laboratory Protection LabWay No. LP-CO-2014-0845** assigned.

2. When the land lines were lost at ATR, only a few ERO personnel had cell phones or went to cell phones as a backup.

   Recommended Corrective Action: Evaluate staging dedicated multiple cell phones at the ATR, with cell phone numbers listed in LST-26, "INL Emergency Telephone Numbers," for each ECC. **Laboratory Protection LabWay No. LP-CO-2014-0846** assigned.

   Recommended Corrective Action: Provide backup power supplies to charge cell phones in a power outage situation. **Laboratory Protection LabWay No. LP-CO-2014-0847** assigned.

3. At ATR, it was noted that the arrangement of the command room needs to be evaluated to allow for better monitoring of equipment and flow of information.

   Recommended Corrective Action 1: Evaluate the ATR ECC command room and determine if a more efficient and effective room arrangement can be achieved. **Laboratory Protection LabWay No. LP-CO-2014-0848** assigned.

   Recommended Corrective Action 2: Evaluate installing a WebEOC monitor in the ATR ECC safety room to allow personnel to more effectively monitor significant events. Determine if training on WebEOC is needed for personnel in the ATR safety room and conduct if necessary. **Laboratory Protection LabWay No. LP-CO-2014-0849** assigned.

4. At SMC, the ergonomics software would activate if the computer was not used frequently.

   Recommended Corrective Action: All BEA emergency planners should evaluate each computer work station and determine if the ergonomic software is on the system and work with the INL Operations Center to disable the ergonomic software**. Laboratory Protection LabWay No. LP-CO-2014-0850** assigned.

Issues

- None identified

5.11 Communications

Communications capabilities are managed in support of emergency operations to ensure prompt and appropriate flow of accurate information during an emergency.

Discussion

Overall communication systems worked in concert to provide prompt and reliable communications for responders and decision-makers. This included phones, radios, computers, and WebEOC. Communication among and between responders and decision-makers was clear, concise, and accurate. Proper protocols were followed and repeat backs were used to verify accuracy of information. During the simulated power outage, most ERO team personnel effectively used alternate communication devices such as cell phones, satellite phones, and radios. Several opportunities for improvement were identified that will enhance the overall effectiveness of the response, but none were of enough significance to prevent effective communication during response activities. Some EAMs felt the command bridge briefings were much improved over the last drill; others felt they were still too long.

Opportunities for Improvement

1. Command bridge briefings can be improved to make them more efficient and effective. For example, the first command bridge did not occur until about the same time as the second earthquake or aftershock. This could have occurred sooner in an event of this magnitude allowing the ED to get a bigger picture of initial conditions. As a result, phone communications were disrupted making the initial briefing difficult to initiate and complete. Some of the command bridge briefings were too long. Some information was redundant and kept other facility EAMs on the command bridge longer than necessary.

   Recommended Corrective Action 1: Validate the process for ERO personnel to use alternate methods of communication such as cell phones when phone service is disrupted to facilitate briefings, so vital event information can be shared. Update applicable procedures and training, and conduct training. This was previously addressed in **Laboratory Protection LabWay No. LP-CO-2014-0787.**

   Recommended Corrective Action 2: Develop a process for EOC/ERO of alternative ways to initiate a command bridge briefing such as sending out text messages and using the planning bridge to tell other facilities when the command bridge will be conducted. Update applicable procedures and training, and conduct training. **Laboratory Protection LabWay No. LP-CO-2014-0852** assigned.

   Recommended Corrective Action 3: Evaluate increasing the efficiency and effectiveness of command bridge briefings during multiple facility events like BDBE in such a way that allows someone other than the EAM to monitor the conference call, answer questions, and take notes. Evaluate how the briefing is conducted including any forms used. Update applicable procedures and training. Conduct training as needed, including hands-on or position-specific drills. **Laboratory Protection LabWay No. LP-CO-2014-0853** assigned.

2. Planning bridge communications bogged down with minor information transmittal. For example, planning bridge congestion delayed transmitting GE PA information. At SMC, they did not get the information until approximately 15 minutes after the declaration. Other mitigating factors have been identified and addressed previously in this document.

   Recommended Corrective Action: Evaluate and determine if there is a method of prioritizing information shared across the planning bridge during events, particularly multiple facility events like a BDBE. This will include a method or protocol that will get the attention of planning bridge participants to allow emergency information items to have a priority. **Laboratory Protection LabWay No. LP-CO-2014-0854** assigned.

3. At ATR, release confirmation information from radiation surveys was slow to reach the ATR ECC planning manager from the RadCon room. The delay was attributed to using the information management forms instead of a verbal report followed by the form.

   Recommended Corrective Action: Remind ERO personnel of the importance of sharing the information verbally first and documenting it on an information form afterwards. **Laboratory Protection LabWay No. LP-CO-2014-0855** assigned.

4. At ATR, the formality of communications and conduct of operations communications were not as complete as desired. This included items like conduct of operations communications between the ATR Simulator SS and the control room phone talker were not satisfactory. Few repeat backs or acknowledgements occurred. Phone confirmation of notification form fax receipt was ignored several times. This was previously addressed in **Laboratory Protection LabWay No. LP-CO-2014-0781**.

5. Some confusion existed on what was the preferred alternate communication method to use during loss of power.

   Recommended Corrective Action 1: Develop an emergency communications plan to provide direction to responders on how to migrate from land line communications to another communications means. This was previously addressed in **Laboratory Protection LabWay No. LP-CO-2014-0787**.

   Recommended Corrective Action 2: When phones failed, the ATR planning communicator was unable to reach anyone on the ERO PlnComm talk group on the radio. Verify ERO planning personnel know how to use the radios and include identifying the correct talk group. **Laboratory Protection LabWay No. LP-CO-2014-0857** assigned.

6. During the loss of power, ATR ERO personnel had to go outside to use the satellite phone since there is not an external antenna tied into the ATR ECC.

   Recommended Corrective Action: Provide an internal connection to an external antenna to allow the use of the satellite phone inside the ECC. **ATR Labway No. CO 2014-5542**.

7. Several items for improvement were identified for the command and planning bridge, such as using position titles versus personal names on the command bridge to reduce confusion, and training responders on the planning bridge on the use of the phonetic alphabet.

   Recommended Corrective Action: Include a reminder in quarterly lessons learned training of the importance of using facility and position names when communicating on the phone bridges and the radio and to use the phonetic alphabet when needed to clarify information. This was previously addressed in **Laboratory Protection LabWay No. LP-CO-2014-0788**.

8. There was some confusion on how to capture and display information during the loss of power.

   Recommended Corrective Action: Review and revise EPI-82, “Emergency Information Management System,” if needed, to ensure a standard methodology exists to capture and display event information when there is a failure of WebEOC. **Laboratory Protection LabWay No. LP-CO-2014-0858** assigned.

9. It was difficult to share and track the status of INL roads and facilities.

   Recommended Corrective Action: Evaluate the possibility of having a universally available visual aid, or tabular list to share road conditions/status and other INL-wide issues to improve the sharing of information. Something other than an entry in WebEOC, such as a display on the smart boards that can be shared or a method to transmit a picture or diagram to each facility. **Laboratory Protection LabWay No. LP-CO-2014-0859** assigned.

10. During the drill, the declaration of a GE was made over the INLEN_D talk group. At SMC, there is a radio console dedicated to that net at all times in the ECC. Nobody is currently assigned the duty to monitor this talk group during an ECC activation.

    Recommended Corrective Action: Evaluate the need to have the radio monitored and determine if it can be monitored by current staff or if new SMC ERO positions need to be established. Train and implement as determined. **Laboratory Protection LabWay No. LP-CO-2014-0860** assigned.

11. The SMC EAM was not aware that the voice paging system, when initiated with a landline, has a 30-second time limit and times out after that.

    Recommended Corrective Action: SMC ERO personnel need to be made aware there is a time-out in the voice paging system. The SMC planner will send this information via a lessons learned e-mail to all SMC ERO personnel. **Laboratory Protection LabWay No. LP-CO-2014-0861** assigned.

12. Several SMC significant events were entered into WebEOC as Task Assignments until the SMC information management coordinator (IMC) noticed the problem.

    Recommended Corrective Action: The SMC emergency planner will work with SMC IMC personnel on the quality control effort to find a way for more frequent refreshment of skills and software familiarity. The SMC emergency planner should e-mail this lessons learned out to ERO personnel. **Laboratory Protection LabWay No. LP-CO-2014-0862** assigned

13. INL items for improvement were identified to expand the communication between CFA medical and INL FD personnel. They used Command 3 for these communications, and this channel was also used by others during the response making communications difficult. The ambulance arrived at the CFA medical facility twice without any notification from the FAC or INL FD on the radio; however, the nurses saw it out there. It would be beneficial to know what type of injuries would be transported to CFA medical so they could be better prepared. At one time, they did call CFA medical with a patient and the physician assistant told them to directly transport the patient to Eastern Idaho Regional Medical Center, but that was overruled by the area command, but not communicated. When the transport officer arrived from the INL FD at the ECC, communication was improved.

    Recommended Corrective Action 1: Remind the INL FD responders to use the current identified INL FD standard operating procedure for mass casualties, which states the IC is responsible to communicate the information to all stake holders and CFA medical regarding patients, etc. **Laboratory Protection LabWay No. LP-CO-2014-0863** assigned.

    Recommended Corrective Action 2: Evaluate the need for and provide a communication channel for only fire and medical in regards to patient needs, transport plans, status, etc. This must be identified in each department's plans. **Laboratory Protection LabWay No. LP-CO-2014-0864** assigned.

Issues

- No issues.

5.12 Medical

Given the facility procedures/plan, medical response personnel will respond to, monitor, and evaluate the specific indicators of an emergency for mitigation of the consequences and bring the emergency situation under control.

Discussion

INL FD prioritized response activities in an effective manner. Medical personnel responded to victims in order of priority of their injuries and appropriately coordinated the two different modes of transport—ambulance for the two seriously injured and POVs for the less seriously injured. Once the one victim player with the developing diabetic condition made her needs known, another employee provided her with a sugar-based food, which alleviated her immediate symptoms before the medics arrived.

Issues

- No issues.

5.13 Fire and Rescue

Given the procedures/plan, fire and rescue responders will respond to an event involving fire or hazardous material, mitigate the consequences, and bring the situation under control.

Discussion

During response actions at INTEC, INL FD personnel lacked a sense of urgency in making their initial assessments. This was addressed previously in **Laboratory Protection LabWay No. LP-CO 2014-0564**.

Issues

- No issues.

5.14 Reentry

The ERO will demonstrate development and implementation of a reentry plan to include debriefing of the reentry team and proper recordkeeping in accordance with the facility procedures/plan.

Discussion

Reentry planning was conducted in accordance with applicable procedures during this drill. Reentry permits were completed with ATR completing two permits. Several areas of improvement have been identified and are addressed below.

Opportunities for Improvement

1. Some confusion existed among responders regarding the difference between reentry and recovery.

   Recommended Corrective Actions: Remind personnel during quarterly lesson learned training the difference between reentry and recovery. **Laboratory Protection LabWay No. LP-CO-2014-0865** assigned.

2. INL FD reentry to attach hoses to the auxiliary canal fill system at ATR was poorly done. The initial INL FD response should have been under a reentry plan. There was no response to a fire or personal injury. A drill controller had to prompt developing a reentry plan for canal fill operations. The way the activity was carried out took too long—between 30 and 60 minutes.

   Recommended Corrective Actions 1: Determine the applicability of having reentry plans and permits for a canal fill pre-planned and filled out in advance to accomplish this in a rapid manner. **ATR LabWay No. CO-2014-5530** assigned.

   Recommended Corrective Actions 2: Evaluate other options to reduce the time it takes to have the canal fill activity occur in a timely manner. **ATR LabWay No. CO-2014-5530** assigned.

   Recommended Corrective Action 3: Determine a method to standardize ATR RadCon participation in INL FD responses when needed for events like filling the canal under emergency conditions. **ATR LabWay No. CO-2014-5530** assigned.

Issues

- No issues were identified.

5.15 Recovery

Given the facility procedures/plan, the ERO will demonstrate recovery planning for an emergency at the affected facility.

Discussion

Recovery managers were identified for each facility. Though the drill scenario did not allow for actual recovery planning, ERO personnel were aware of the applicable procedures and their responsibilities in regards to recovery. A good discussion occurred within the EOC on how to determine a recovery organization with one person having overall responsibility and the individual recovery managers at each facility as a minimum. SMC ERO personnel began recovery planning by determining who would have to stay at SMC as part of a recovery planning team.

Issues

- No issues were identified.

5.16 Drill/Exercise Conduct

Write, conduct, and evaluate a drill/exercise that will emphasize facility-specific emergency events and response activities and minimize the use of generic, nonspecific simulations in accordance with the facility procedures/plan.

Discussion

The drill scenario was realistic and provided a good opportunity for ERO personnel to demonstrate their response capabilities. The Master Sequence of Events List provided a controlled supply of activities in a timely manner that kept the scenario on track and effectively coordinated between facilities. The drill director and lead controllers were able to coordinate drill activities in an effective manner that provided free play and ERO personnel participation without being led to any preconceived actions. ERO personnel were actively involved and responded to information in a productive and effective manner that allowed the drill to move forward and provide effective response actions. Controllers and evaluators were used throughout the drill. Applicable critiques were held that allowed all personnel the opportunity to provide feedback. Note that the extended play of the drill opened up new opportunities for ERO personnel to interact and address longer term response actions.

Opportunities for Improvement

1. Several improvements can be added to the ATR simulator to enhance the overall response:
    - Install radios in the simulator
    - Install a fax machine, similar to the fax machine in the ATR Control Room in the simulator.
    - Provide a block in the ERO attendance rosters to allow printing the names of responders. Signatures are difficult to read and this slows down the accountability process. **Laboratory Protection LabWay No. LP-CO-2014-0866** assigned.

      Recommended Corrective Action: Evaluate the ERO attendance form and create an additional block to include space for printing ERO personnel's names. **Laboratory Protection LabWay No. LP-CO-2014-0867** assigned.
2. ATR needed more drill controllers for the ECC, ATR simulator, and FMTs. Last minute changes to availability removed personnel from key controller positions. This was addressed previously see **Laboratory Protection LabWay No. LP-CO-2014-0792.**

Issues

- No issues were identified.

6. CWI ISSUES AND OPPORTUNITIES FOR IMPROVEMENT AT INTEC

1. **ERO Response**: (Satisfactory with Weakness)

   - The INTEC EAM and PAL did not adequately capture information on MFC Decontamination and Decommissioning (D&D) facilities and there was no follow-up with status of injuries, accountability, or facilities. There was no ongoing communications with the MFC D&D facility representative at the MFC ECC.

     Recommendation: Review the emergency initial call question form that the INTEC EAM has access to and determine what changes need to be made to adequately capture information of injured personnel, including individual S numbers, accountability of personnel, facility damage and prioritization of information. **CWI WGT: 23872**

   - The INTEC support manager was uncertain on the request to work with the FMT. This is not his normal duty so the manager was unsure of his response. **This item was discussed in critique and is considered closed**.

   - The INTEC Area Wardens (AWs) did not report to the Area Warden Coordinator (AWC) as they should have, which was caused by not utilizing their checklists.

     Recommendation: Remind AWs to always report information to the AWC and utilize the checklists, as appropriate. **CWI WGT: 23712**

   - Some AWs did not know they had to fill out the relocation Form 150.16 prior to loading the buses**.**

     Recommendation: Send an e-mail to the AW/AWCs reminding them to be aware and to use Form 150.16, "Evacuation Relocation Form," as stated in their checklists, when loading personnel on the buses. **CWI WGT: 23878**

   - The INTEC EAM did not give any plant status to the INTEC general population, such as facility status and where the issues and damage was around the plant.

     Recommendation: Several items of improvement were identified during the OE1 evaluated drill. For example, very little information was entered on the WebEOC system from INTEC during the OE1 evaluated drill, and area communications to the plant need improvement, such as where the issues in the plant are, and what is the facility status. Work with the appropriate decision makers, and recommend improvements, as necessary**. CWI WGT: 23882**

   - The INTEC ERO personnel need to use better judgment on when to pass information to the INTEC EAM. Consideration should be given on what the INTEC EAM is doing that exact second.

     Recommendation: Discuss in requalification training, that when approaching the INTEC EAM, ERO personnel need to use good judgment on when to pass information on to the EAM. ERO personnel need to consider what the EAM is doing at that moment. **CWI WGT: 23782**

   - The INTEC PALs did not utilize or follow their position specific checklist, which caused some confusion when requesting accountability from other facilities such as MFC, ensuring buses were loaded and when they were released.

     Recommendation: Work with the INTEC PALs to ensure their checklists are appropriately completed. They should use clear communication skills when determining accountability, when to load/unload buses, and when the buses are released. **CWI WGT: 23880**

- Some ERO personnel did not utilize their checklists.

  Recommendation: During requalification, emphasize to ERO personnel to closely follow their checklists as appropriate. **CWI WGT: 23782**
- The INTEC EAM declared two EALs but did not brief the ERO. **This item was discussed in the critique and is considered closed.**

2. Offsite Response Interfaces: (Satisfactory)

- No issues.

3. Emergency Event Cat. and Class: (Satisfactory)

- No issues.

4. **Notifications**: (Satisfactory with Improvement Needed)

- A procedure or guide on next of kin notification through Human Resources is not available.

  Recommendation: Review the next of kin notification process and determine if improvements can be made in the process. Provide recommendations to Jeri Harwood. **CWI WGT: 23896**

5. Consequence Assessment: (Satisfactory)

- The information the BEA consequence assessment specialist sent back to the INTEC ECC would not have been useful. **This was discussed in the BEA Critique and is considered closed.**

6. Protective Actions: (Satisfactory with Improvement Needed)

- More control of the scene was needed so personnel would stay out of the area.

  Recommendation: Issue lessons learned to the on-scene communicators and other appropriate personnel on how to control the scene and respond to injured personnel. **CWI WGT: 23891.**
- Since the Integrated Waste Treatment Unit (IWTU) Shift Supervisor was exempted, another SS was not available to participate, which caused a delay in accountability. **This item was discussed in the critique and is considered closed.**
- There was confusion on whether to evacuate CPP-663. Some personnel evacuated into the spill area. Some in the maintenance area stayed for a very long time. The AW directed personnel upstairs on what to do, but did not coordinate with the AWs on the first floor in letting them know how they were going to evacuate.

  Recommendation: Work with CWI Communications and Craig Olson on issuing a notification to INTEC personnel regarding reviewing evacuation protocol from local buildings (direction from AW, timely action, and avoiding spill areas.) **CWI WGT: 23874**
- There was confusion with people carding in and out of the cafeteria. This needs to be clarified since the cafeteria is used for shift personnel, RadCon, and others who are told to relocate there.

  Recommendation: Work with CWI Communications and Craig Olson on issuing a notification to INTEC personnel regarding clarification on who should "card" in/out in the cafeteria and who should not. **CWI WGT: 23874**

7. Public Information: (Satisfactory)

- No issues.

8. Monitoring Team Activities: (Satisfactory)

- No issues.

9. **Security**: (Satisfactory)

- A better way of communicating what Security sees in the field and transmitting information to the ECC is needed. Right now, the information only goes through the Security protocol.

  Recommendation: Evaluate with BEA Security on a better way of communicating what Security patrols see in the field and how it is reported to the ECC. **CWI WGT: 23885**

10. **Emergency Facilities and Equipment: (Satisfactory with Improvement Needed)**

- The INTEC EAM stated the group could be more proactive in scanning the plant for damage. **This issue was discussed in the critique and is considered closed**.
- The FMTC stated they need to have more FMT radios. It was noted they only had two available. The FMT stated they need training on how to use them and access additional channels.

  Recommendation: Provide additional information to the FMTCs on how to use the radios and access additional channels. Evaluate providing additional radios for their use. **CWI WGT: 23873**
- The eastside designated AW had problems with the radio.

  Recommendation: Work with Angie Goodwin to ensure her radio is working properly. **CWI WGT: 23875**
- The INTEC PAL radio had problems and they could not hear information coming in from the designated AWCs. This item was corrected after the drill was over, and the item is considered closed.
- The Security position base station in the INTEC ECC does not work. This item was corrected by putting a new base station in, and the item is considered closed.
- The INTEC technical specialists were having trouble getting people to respond on their cell phones. Some people still think that you cannot use cell phones during an emergency drill or event. Clarification needs to be reemphasized.

  Recommendation: Work with CWI Communications and Craig Olson on issuing a notification to INTEC personnel regarding the use/or non-use of cell phones during emergency events and drills. **CWI WGT: 23874**
- The bus list seat count differs from the actual seat count on the Emergency Bus (48 seats versus 45 seats).

  Recommendation: Review the numbering on the bus list for the emergency bus. Make appropriate changes, as necessary. **CWI WGT: 23881**
- Very little information was being put on WebEOC from INTEC.

  Recommendation: Work with the appropriate decision makers and recommend improvements as necessary. **CWI WGT: 23882**
- No voice paging announcements can be heard in Post-505.

  Recommendation: Work with BEA to ensure the voice paging system is fixed so all areas in the BEA CPP-651 area can hear announcements. **CWI WGT: 23884**.
- Personnel inside the cafeteria could not hear the evacuation siren. The non-essential personnel did not evacuate initially until someone finally came in and told them to evacuate.

  Recommendation: Have Life Safety work with Jeri Harwood to determine an appropriate path forward, including a potential cost estimate on reactivating the evacuation siren inside CPP-652 Cafeteria. **CWI WGT: 23887**

Recommendation: Review the INTEC EAM checklist, as appropriate and determine how/when personnel in the cafeteria are notified concerning drill/event status. Recommend any changes, as needed. **CWI WGT: 23888**

- The personnel list on the medical first aid kits is out of date.

  Recommendation: Determine if lists in the first aid kits in CPP-1604 and other buildings need to be updated. **CWI WGT: 23889**

- The AWs were not familiar with the new appendixes that need to be filled out from their checklists.

  Recommendation: As part of the annual AW requalification, the checklist will be emphasized including the new appendix that will be discussed. **CWI WGT: 23712.**

- The Emergency Communication System is inaudible northeast of CPP-1634, north of RAL and CPP-666.

  Recommendation: Have CWI Life Safety evaluate and determine if actions are needed to be taken on areas in the plant where the Emergency Communication System is inaudible. **CWI WGT: 23877**

- Voice paging in CPP-1666 does not work like it should.

  Recommendation: Work with CWI Communications and Craig Olson on issuing a notification to INTEC Personnel regarding reminding personnel of their responsibility to determine what the Voice paging announcement is, if they are not able to understand it. **CWI WGT: 23874**

11. **Communications**: (Satisfactory with Improvement Needed)

- The CWI Senior Management Advisor could not notify Human Resources (HR) through the WCC. Instead, they called HR directly to communicate information**.**

  Recommendation: Work with WCC personnel, as appropriate, to improve their communication protocol with CWI HR. **CWI WGT: 23886**

- Some personnel requested we provide feedback to the general employees on how the drill went and what things need to be improved.

  Recommendation: Work with CWI Communications and Craig Olson on issuing a notification to INTEC personnel regarding providing feedback to INTEC personnel on how the OE-1 drill went and what things need to be improved. **CWI WGT: 23874**

- Personnel were unsure how to call the INL FD**.**

  Recommendation: Work with CWI Communications and Craig Olson to issue a notification to INTEC personnel regarding when using a land line to report an emergency, they should dial 777. On other phones, the correct number is 526-7777. **CWI WGT: 23874**

- Approximately half way into the drill, unrelated sidebar discussions were taking place in the ECC, which required the INTEC EAM to obtain order inside the ECC to give a briefing**.**

  Recommendation: Discuss in requalification training ERO personnel need to maintain their focus on EAM communications/briefings during lengthy drill response. **CWI WGT: 23782**

- ERO personnel were not consistently utilizing repeat backs or using titles (instead of names) in their transmissions.

  Recommendation: Discuss in requalification training repeat backs and the use of titles instead of names, are necessary in all communications. **CWI WGT: 23782**

- On the planning bridge, the planning communicator stated it was confusing since people were talking over other's conversations. There was unnecessary chatter at the AMWTP and CFA facilities. Radio communications need to be concise. Use of title and the name of the respective

facilities were not always used. **This item was discussed during the BEA critique and is considered closed.**

- CFA logistics had bus operations inform personnel on the buses at INTEC to unload the buses instead of going through the proper chain and letting INTEC EAM have the INTEC PAL release personnel. **This item was discussed during the BEA critique and is considered closed.**
- The first command bridge was non-existent. The ED had a poor response. **This item was discussed during the BEA critique and is considered closed.**

12. **Medical**: Not applicable (N/A)
13. **Fire and Rescue**: N/A
14. **Reentry**: (Satisfactory)
    - No issues
15. **Recovery**: (Satisfactory)
    - No issues
16. **Drill/Exercise Conduct**: (Satisfactory)
    - Several personnel in CPP-1604 did not take the drill serious.

      Recommendation: Work with CWI Communications and Craig Olson to issue a notification to INTEC personnel reminding personnel to take drills seriously and to respond as if they were in a real event. **CWI WGT: 23874**
    - Cell phones need to be put on vibrate. **This item was discussed during the critique and is considered closed.**
    - One controller thought it was too difficult to be both a controller and a player (NFM). **This item was discussed during the critique and is considered closed.**
    - One controller did not pass a cue card on the aftershock at the correct time, which caused initial confusion to ERO personnel when the power and phones were disabled. The cue card was injected approximately 10 minutes late. **This item was discussed during the critique and is considered closed.**
    - The INTEC Vice President brought up there is still concern with who is approved to be exempted and when and the resulting confusion when exemptions are requested at the last minute.

      Recommendation: Discuss in the emergency management Executive Safety Review Board presentation the importance of everyone participating in required drills, and to greatly minimize any approved exemptions, and have no self-exemptions. Encourage a 24-hour notification prior to a drill, if exemptions are identified. **CWI WGT: 23883**

17. Other (Describe below):

- There were multiple issues associated with the medical response team (MRT). The following issues will be addressed: (1) some MRT personnel were unsure of other MRT personnel in the area; (2) no MRTs showed up where the burn victim was located and the project has the responsibility to call the MRTs; (3) no one knew what Pat Starr's role was when she tried to walk through the evacuated area by CPP-663; (4) some MRTs did not know to go to the cafeteria when called by the Emergency Communication System; (5) some MRTs were hesitant to help; (6) MRTs need training on how to communicate to the MRTs on where to go or the location of the injured personnel; (7) MRTs need adequate directions; (8) walking wounded, if attended by an MRT, should leave the facility with that MRT unless turned over to EMS personnel; (9) some personnel thought there were two MRTs in each building; (10) MRTs need a new color vest to ensure personnel know who they are.

  Recommendation: Evaluate any MRT lessons learned from this drill, including the following topics and take appropriate action, if necessary: (1) some MRTs may be hesitant to help in an emergency response; (2) some MRTs may be unclear on where they should report to; (3) MRTs should wear a vest identifying who they are; (4) MRTs need proper instruction on how to load the buses; (5) remind personnel to be careful with handling medical equipment (e.g., gloves); (6) MRTs should evacuate with the "walking wounded"; and (7) clarify to personnel how many MRTs are available at any one time. Communicate conclusions and any lessons learned from this event to Jeri Harwood. **CWI WGT: 23876**

- Injured personnel should act more realistic. Someone who is severely burned would not be quietly laying there and visiting. **This was discussed during the critique and is considered closed.**

- The INL FD was not very realistic in their response. It was poor drillsmanship. They provided no first aid. They acted like they were not trained. **This item was discussed in the BEA critique and is considered closed.**

- The INTEC general population did not know how to respond during an earthquake.

  Recommendation: Work with Communications and issue an iCLIP notification to CWI employees including subcontractors identifying how to respond to an earthquake. **CWI WGT: 23879**

- There was one BEA bus driver from CFA who thought he was supposed to come inside INTEC with his bus. This item was discussed with the CFA emergency planner after the drill and upon further investigation, the bus driver misunderstood the directions he was given. **This item is considered closed.**

- **List any positive actions from the drill.**
  - The INTEC EAM did a good job with decision making. Command presence was exceptional.
  - The INTEC Vice President stated that we used excellent props and moulage for the drill and our response was much better than in the past.
  - The INTEC Vice President stated that it was good to have a fresh perspective on having non-5000 organization personnel as part of the ECC response.
  - The ERO did a great job. Notifications were good and on time. Categorization and classification was done within the allocated time.
  - Security support in the INTEC ECC helped out greatly with getting roadway information and other information.

- In the INTEC Power Operations Control Room, personnel discussed how to respond to the earthquake and the AW thought the response was good.
- The INTEC technical support team worked well with all the nuclear facility managers (NFM) who responded for the event.
- Good weather determination.
- Observed possible evacuation routes.
- Great discussions on relocation of the ECC.
- The INTEC EAM checked for habitability and made a conscious assessment on entering the INTEC ECC.
- RadCon Technicians were available to monitor individuals as they left during the evacuation.
  - The emergency bus drivers reported and went out to the emergency buses, and started them.
- The IWTU SS did a good job. When he received the information on the earthquake a seismic alarm was simulated as going off, the IWTU EAM and his crew responded and completed their emergency, abnormal operating, and alarm response procedure actions. He reported the information to the NFM.
- With information the IWTU SS received on TR-69, he responded by evacuating the trailer after the initial earthquake.
- A positive evaluation of the situation and evacuation on the second floor of CPP-663 proved to have a positive outcome.
- The FMTC kept a check on the radiation area monitor (RAM) and constant area monitor (CAM) inside the INTEC ECC to ensure the facility was still habitable for radiological conditions.

- **List any corrective actions that were demonstrated as completed during the drill.**

  CWI WGT: 23725: The correct information was identified for this drill and was properly communicated to the players during the player briefing. A discussion was held with the decision makers on how to make correct and timely EAL decisions based on the information provided.

7. CWI ISSUES AND OPPORTUNITIES FOR IMPROVEMENT AT RWMC

1. **ERO Response**: Satisfactory

   - Several items on the planning manager checklist were out of sequence with information flow; (e.g., early steps in the checklist recommend actions to the EAM when the needed information was not yet available).

     Recommendation: Review the planning manager checklist, reentry forms and permits that are used at RWMC and make appropriate changes. Identified concerns included the following: (1) early steps in the checklist recommend actions to the Emergency Action Manager (EAM) at a time when information is unknown; and (2) applicable forms address radiation concerns, but do not specifically address contamination concerns. RWMC is contamination based, but forms are radiation based. **CWI WGT No. 23867.**

2. **Offsite Response Interfaces**: Satisfactory
3. **Emergency Event Cat. And Class**: Satisfactory

4. **Notifications**: Satisfactory

    - The notifications manager received confirmation through the EAM the ED was taking over notifications. The confirmation was not posted on the WebEOC.

      Recommendation: Investigate why this was not reported. **CWI WGT No. 23865.**

5. **Consequence Assessment**: Satisfactory

6. **Protective Actions**: Satisfactory

    - At 0912, the planning communicator reported the ATR EAM said the water was going down in the basin, but there were no PAs in place. At 0926, the EAM was told by the Planning communicator the ATR EAM recommended RWMC personnel evacuate. When the RWMC EAM called the CFA EAM at 0936 for an evacuation route, the CFA EAM said RWMC should not evacuate.

      Recommendation: ATR was slow to recommend RWMC evacuation. Discuss with the CFA EAM, as appropriate, the conflicting BEA messages concerning whether to evacuate or not, that were received. **CWI WGT No. 23863**

    - In the scenario, the Adams Street bridge (just east the RWMC parking lot) collapsed during the initial earthquake leaving the normal exit road impassible. On three occasions, the RWMC EAM and AMWTP EAM discussed RWMC facility evacuation through AMWTP. The AMWTP EAM never mentioned the AMWTP criticality alarm, an OE had been declared, or AMWTP had issued a protective action to shelter non-essential personnel.

      Recommendation: There was confusion during this drill on when the criticality alarm was supposed to occur from AMWTP and with proper communications with the RWMC EAM. Investigate what actually happened, and why, and determine if any actions need to be taken. **CWI WGT No. 23864**

7. **Public Information**: Satisfactory

8. **Monitoring Team Activities**: Satisfactory

9. **Security**: Satisfactory

10. **Emergency Facilities and Equipment**: Satisfactory

    - There is a small area map that Planning Managers use that shows only the footprint of ARP VIII, which should be updated.

      Recommendation: Update small map used by the Planning Managers during emergency drills and events to show the current facility layout**. CWI WGT No. 23870**

11. **Communications**: Satisfactory

    - The IMC did not get all the information to post to the WebEOC.

      Recommendation: Emphasize the need to post relevant information on the WebEOC during emergency events and drills. Place this in ERO requalification training. **CWI WGT No. 23782**

    - The planning communicator dialed the wrong bridge line, realized the mistake, and dialed into right bridge. However, that took eight minutes.

      Recommendation: Review the planning communicator paperwork. Determine if it is appropriate to color code/update the phone numbers since the planning communicator was confused as to which phone number to call. **CWI WGT No. 23866**

    - WebEOC had so much information being posted so quickly that if you looked away, you missed it. Maybe the whiteboard could be used to capture highlights.

Recommendation: Send an e-mail to the RWMC planning managers reminding them that a printout of the information coming across on WebEOC is available for them to keep the EAM up to date of key information. **CWI WGT No. 23868**

Recommendation: Review information manager checklist to determine if it can be improved on how we receive and communicate timely information. **CWI WGT No. 23869**

- All communications and repeat backs need improvement. When receiving a repeat back, make sure the summarized information is repeated back correctly and contains all major components, or tell them "No that is not what I said." "This is a drill" was not used in some phone communications and caused some confusion as to whether injured personnel's families were being notified.

  Recommendation: Communications and clear repeat backs can be improved. Include in requalification training. **CWI WGT No. 23782**

12. **Medical**: Satisfactory
13. **Fire and Rescue**: Satisfactory
14. **Reentry**: Satisfactory
15. **Recovery**: N/A
16. **Drill/Exercise Conduct**: Satisfactory
17. **Phase I – Activation and Relocation**: N/A
18. **Phase II – Continuity Operations**: N/A
19. **Phase III – Reconstitution**: N/A
20. **Alert/Notification Procedures**: N/A
21. **Communications (COOP)**: N/A
22. **Other (Describe below)**: None

- **List any positive actions from the drill.**
  - There were frequent and informational communications among the EAM, Assistant EAM, and personnel in TR-23 and TR-24. Issues were understood, were a high priority and were resolved.
  - The EAM did a good job of verbalizing his actions and protecting people.
  - When conflicting information was received as to whether RWMC should evacuate, the EAM pulled up the ATR EALs to verify that evacuation was the correct protective action and promptly ordered RWMC evacuation.
  - AT 1005, an actual fire alarm was received in WMF 1617 and the INL FD responded. The operations manager, who was part of the control cell, advised the lead controller within 30 seconds there was no work in the building, that new equipment had been installed the previous day, and the probable cause for the alarm was high wind. The lead controller immediately called the BEA drill director and informed him of the situation. It was agreed the drill would not go into a pause until the situation was confirmed, which the operations manager did at approximately 1012. Kudos to the operations manager for fast thinking, fast communications and preventing a pause in this Sitewide multi-facility evaluated drill.

8. ITG ISSUES AND OPPORTUNITIES FOR IMPROVEMENT AT AMWTP

- **The following program elements were satisfactorily demonstrated with noted improvement items:**

  - **Program Element 1 – ERO Response**

    1.1 **Improvement Item** – Planning Bridge/Command Bridge Communications. It was noted by the emergency specialist on the planning bridge, information was difficult at times to obtain from other INL EROs. Given the nature of the event, command bridge briefings were noticeably infrequent. This item has been discussed with INL Emergency Management in the INL-wide post drill debrief conducted on October 23, 2014, and is documented in this report. No further actions will be taken on these items.

    1.2 **Improvement Item** – Web EOC Display of Information. The emergency specialists were observed having difficulty maintaining the WebEOC with current information given the nature of an INL-wide event and displaying information from all INL facilities. Emergency specialists have been experiencing some difficulty with efficient operation of WebEOC. An action will be taken to provide some refresher training to emergency specialists. See ITG TrackWise Action Item 89536 - OE-1 Evaluated Drill, WebEOC Refresher Training.

    1.3 **Improvement Item** – EAM/AEAM Log/Checklist. Personnel in the ECC were observed using procedures and checklists in completing their assigned functions. It was noted neither the EAM nor the AEAM had completed/filled out checklists or logs for this event. Discussion was completed with both the EAM and AEAM that participated in the October 21, 2014 drill. Topics discussed included importance of keeping a log and completing checklists, use of the emergency specialists to ensure appropriate entries are being entered into WebEOC, and the potential use of additional qualified EAMs to assist as necessary. No further action will be taken on this item.

  - **Program Element 3 - Emergency Event Categorization and Classification**

    3-1 **Improvement Item** – Applicable EAL Review: The EAM correctly identified EAL 5.OE.53 and subsequently EAL 10.A.62 as applicable for this event, and implemented PAs for all AMWTP non-essential personnel. The drill scenario also involved breached containers in WMF-636 (simulated at Pad 2) with a CAM in alarm meeting the conditions of EALs 3.A.34 and 5.A.52. Neither of the EALs were recognized as applicable by the EAM. EAMs are trained to review for all applicable EALs. Thorough review for all applicable EALs will be a topic of refresher training for all EAMs. See ITG TrackWise Action Item 89554 – EAL applicability review refresher training for all EAMs.

  - **Program Element 4 – Off-Site Notifications**

    4-2 **Improvement Item** - EOC Support Director Notifications: The AMWTP emergency specialist – notifications, indicated when contacting the EOC support director to provide notification information (after the BDBE EAL declaration), the EOC support director informed him to contact the WCC (instead of the EOC support director) with the information.

    This item has been discussed with INL Emergency Management in the INL-wide post-drill debrief conducted on October 23, 2014, and is documented in this report. No further actions will be taken on these items.

4-3 **Improvement Item** – Notification Forms Missing Information: It was observed not all notifications forms generated at AMWTP were completed with all required information. Emergency specialists and EAMs are trained to ensure that all items on notification forms are completed properly. Completion of notification forms will be a topic of refresher training for all emergency specialists and EAMs. See ITG TrackWise Action Item 89557 Notification Form completion refresher training for emergency specialists and EAMs.

- **Program Element 6 – Protective Actions**

6-1 **Improvement Item** – Timely Communications of ATR GE PAs. As documented on emergency notification forms, a GE was declared at ATR at 0859. PAs associated with ATR GE were not clearly communicated to the AMWTP EAM for this event. It was also noted that AMWTP EAM, upon learning of the ATR GE, should have been aggressive in determining impacts to AMWTP personnel. This item has been discussed with INL Emergency Management in the INL-wide post drill debrief conducted on October 23, 2014, and is documented in this report. In addition, training has been developed (TGEMAN0000020 – OE Lessons Learned, INL Risks, Emergency Exposures) with an intended audience of EAMs, TSCDs, plant managers, and ES&H managers) to discuss the impact on AMWTP from other INL facilities with GE EALs. This tailgate material will be incorporated into refresher training for these positions. See ITG TrackWise Action Item 89558 -TGEMAN0000020 – OE Lessons Learned, INL Risks, Emergency Exposures with EAMs, TSCDs, plant managers, and ES&H managers.

6-2 **Improvement Item –** Coordination of AMWTP vans, buses, and POVs for Evacuation. It was observed that although the use of AMWTP vans, buses, and POVs would likely have been successful in facilitating evacuation of AMWTP personnel, duplication of effort by the technical support team and the Security representative resulted in some confusion in vehicle assignment. Because organizing the evacuation of AMWTP personnel through AMWTP busses, vans, and POVs was confusing, an action will be initiated to identify a simple tool to facilitate this process. See ITG TrackWise Action Items 89561 - Evacuation of AMWTP personnel through AMWTP buses, vans, and POVs.

- **Program Element 10 – Emergency Facilities and Equipment**

10-1 **Improvement Item** – WebEOC – Display of Information (see Program Element Item 1-2). Emergency specialists have been experiencing some difficulty with efficient operation of WebEOC. An action will be taken to provide some refresher training to emergency specialists. See ITG TrackWise Action Item 89536 – OE-1 Evaluated Drill, WebEOC Refresher Training.

10-2 **Improvement Item** – On-Scene Decontamination. Although generally operations, radiological safety, and ISIH personnel responded with the necessary monitoring equipment, it was observed equipment/supplies to perform decontamination of personnel at the scene were not readily available. Response for the decontamination of personnel at the scene was observed to not be completed due to lack of supplies. An action will be initiated to ensure those supplies/equipment are available for timely decontamination of personnel during the response to a casualty. See ITG TrackWise Action Items 89562 – Decontamination of personnel at the scene response was observed to not be completed potentially due to lack of supplies. An action will be initiated to ensure equipment/supplies are available for timely decontamination of personnel during the response to a casualty.

10-3 **Improvement Item** – Security Gate Manual Operations. It was also noted during the loss of power period the ability to open the AMWTP security gate through normal means was lost and ERO personnel were unsure how to manually open the gate in a timely manner if necessary. The ability to open the AMWTP main security gate was a concern during the simulated power outage. An action will be initiated to determine how the AMTWP main gate can be opened during an emergency that involves a loss of power condition. See ITG TrackWise Action Item 89563 - The ability to open the AMWTP main security gate was a concern during the simulated power outage. An action will be initiated to determine how the AMTWP main gate can be opened during an emergency that involves a loss of power condition.

- **Program Element 11 – Communications**

11-1 **Improvement Item** – Planning and Command Bridge Communications (see Program Element 1, Item 1-1). This item has been discussed with INL Emergency Management in the INL-wide post drill debrief conducted on October 23, 2014, and is documented in this report. No further actions will be taken on these items.

11-2 **Improvement Item** – Use of Commissioning-One During Drill. Use of Commissioning-One for a drill of this scope introduced communication difficulties that may otherwise not have occurred with a frequency on the repeater. Use of the Commissioning-One radio channel proved to be unsatisfactory in facilitating communications from on-scene. Commissioning-One does not transmit through a repeater. An action will be initiated to obtain Operations approval to use the “MAIN” during evaluated drills/exercises. See ITG TrackWise Action Item 89564 – Use of the Commissioning-One radio channel proved to be unsatisfactory in facilitating communications from on-scene. Commissioning-One does not transmit through a repeater. An action will be initiated to obtain Operations approval to use the “MAIN” during evaluated drills/exercises.

11-3 **Improvement Item** – INL OSC Communications. Attempts by the SS to contact the INL FD on the INL OSC radio frequency were unsuccessful. Use of INL OSC is unreliable in establishing/maintaining communication between AMWTP on-scene personnel and INL EMS. Four additional radios have been purchased with increase transmission strength. Initial testing indicates high reliability in communications between on-scene personnel and INL EMS. An action will be initiated to establish protocols to facilitate the high-strength radios are delivered to on-scene personnel in a timely manner. See ITG TrackWise Action Item 89565 - Use of INL OSC is unreliable in establishing/maintaining communication between AMWTP on-scene personnel and INL EMS. Four additional radios have been purchased with increased transmission strength. Initial testing indicates high reliability in communications between on-scene personnel and INL EMS. An action will be initiated to establish protocols to facilitate use of high-strength radios by on-scene personnel in a timely manner.

Comment – Assigned Cell Phones for Alternate Communications. It was noted that use of personal cell phone numbers rather than assigned cells phones for ECC positions may become an issue if cell phones were used for an extended period.

- **Program Element 12 – Medical**

  12-1 **Improvement Item** – AMWTP Medical Response. Although medical response at the scene by AMWTP personnel was carried out, given the conditions were unlike that typically exercised at AMWTP (delayed or non-existent response from INL FD, ongoing release, life threatening injuries), the response was disjointed and responders were hesitant and unsure of actions to take. Medical and rescue activities conducted during the drill were disjointed and responders were hesitant of actions to take. An action will be initiated to evaluate the need for a structured response unit within AMWTP. See ITG TrackWise Action Item 89566 - Medical and rescue activities conducted during the drill were disjointed and responders were hesitant of actions to take. An action will be initiated to evaluate the need for a structured response unit within AMWTP.

- **Program Element 13 – Fire and Rescue**

  13-1 **Improvement Item** – AMWTP Rescue Resources. Although rescue response at the scene by AMWTP personnel was carried out, given the conditions were unlike that typically experienced at AMWTP (delayed or non-existent response from INL FD, ongoing release, life threatening injuries), the rescue response was disjointed and responders were hesitant and unsure of actions to take. Medical and rescue activities conducted during the drill were disjointed and responders were hesitant of actions to take. An action will be initiated to evaluate the need for a structured response unit within AMWTP. See ITG TrackWise Action Item 89566 - Medical and rescue activities conducted during the drill were disjointed and responders were hesitant of actions to take. An action will be initiated to evaluate the need for a structured response unit within AMWTP.

- **The following program elements were not satisfactorily demonstrated:**

  - **Program Element 4 – Notifications**

    4-1 **Issue –** Next-of-Kin Notifications. The names of the injured individuals at WMF-636 were not communicated to the ECC nor requested by ERO personnel during the response. Next of kin notifications were not observed or documented as having been completed for this event. Recommended corrective action: Evaluate process and revise as necessary. Review next of kin process with ERO personnel.

- **Positive Observations:**

  1. The AMWTP ERO demonstrated a high level of teamwork throughout the event, which allowed them to work through a complicated scenario and stay focused on the safety of personnel.
  2. PA determinations by the EAM were timely and given multiple event-related issues, and provided a practical margin of safety for non-essential personnel.
  3. Technical Support Center personnel remained focused on establishing and adjusting priorities in coordination with the EAM.
  4. The WMF-636 mock-up was well constructed and provided an environment that facilitated realistic on-scene response.
  5. Screen shots used as drill props for criticality incident detection and alarm system (CIDAS) and CAM alarm status provided realistic information for ERO personnel.
  6. Images used to depict damage to WMF-636 and the ARP-5 facility provided an effective tool for informing drill participants on plant conditions.
  7. Controllers quickly recognized potential safety issues or other activities that required either adjustment or pauses during the drill.

9. CONCLUSIONS

On October 21, 2014, INL and its subcontractors successfully demonstrated its capability to respond to a BDBE that included releases at multiple facilities, loss of commercial power, landline communications, and Internet capabilities. Facility EAMs effectively categorized and classified the events at their respective facilities and protected personnel. Emergency responders triaged the events as information was received and provided medical and emergency assistance using the available equipment and personnel. Facility EAMs and the ED effectively used available communication tools to share event information. Offsite agencies were actively engaged in the drill and worked with ERO personnel in the EOC to form an effective team. The protection of personnel was a clear priority for all response personnel.

Several lessons learned came out of this drill that will provide all EROs opportunities to fine tune and enhance their response capabilities. One of the main things identified was how overloaded some of the communication capabilities became, such as the INL OSC radio talk group channel. This channel is used by the INL FD to communicate with the affected facility when responding. Usually, this process works very well when there is only one facility involved; however, with multiple facility events, the INL FD was using the same channel to talk to multiple facilities simultaneously. This caused some delays in relaying information from the various scenes to the facility, but also forced the facilities to use repeat backs and position titles to effectively communicate. Similar problems occurred on the planning bridge. It is also evident that the command bridge briefings between the EAMs and the ED will take longer to complete. To make this process more efficient and effective, various ways will be looked at to make the command bridge briefings more productive.

Though initial time requirements were met, some opportunities for improvement came up in our notification process. When an event of this magnitude occurs, it is important for the ED to be proactive in assuming responsibilities for notifications, otherwise multiple forms are submitted to the WCC, which makes it take longer to make additional offsite notifications and in some cases bog down the fax machines. Some facility ERO personnel appeared to be in a hurry, which caused some minor information to be left off of the forms. In one instance, the additional EAL and PA/PAR information was not attached to the notification form or was filled out incorrectly. One subcontractor did not meet their objective in completing the next-of-kin notification.

PAs/PARs were effectively determined and implemented at each facility. Offsite PARs were quickly determined and simulated as being implemented. It was evident throughout the drill that the protection of personnel was the top priority. The only problem came during the communication of PAs/PARs to the other facilities. This occurred during the loss of commercial power and telephone lines. The ATR EAM had the information passed across the panning bridge to the WCC using either a cell phone or a satellite phone, but the information was not relayed to the affected facility EAM for an additional 15 minutes. Once the information was provided, personnel effectively implemented or simulated implementation, as applicable, the PAs at their facility. Accountability was successfully demonstrated at each facility. Applicable personnel were researching various routes of travel to evacuate INL. Security personnel effectively identified and simulated appropriate protocols that would be implemented during events of this magnitude.

Buses were dispatched to ATR and INTEC to support evacuation activities. Personnel effectively evacuated within the time requirements and loaded the buses. The buses at ATR were dispatched to CFA and then returned while personnel at INTEC only boarded the buses, but after accountability was determined, personnel were released to go back to work. Initially there was some confusion when the buses left ATR in that there had not been a formal transfer of control of the evacuees from the ATR EAM to the CFA EAM.

Communication channels were effectively used during this drill. As previously noted, there are opportunities for improving some of the communication channels for events involving multiple facilities that will be evaluated and corrected. Facility ERO personnel demonstrated effective communications within their respective ECCs/EOC and in communicating between facilities and incident command.

Facilities and equipment were effective and functioned properly. Personnel used and followed their respective procedures and checklists. When commercial power was lost and communication systems were down, alternate methods were used.

Reentry planning occurred at some of the facilities and was conducted in accordance with procedures. An opportunity for process improvement was identified and will be evaluated at ATR to be used for emergency canal filling to expedite the reentry process for INL FD personnel when they re-enter the area. Recovery managers were identified for each facility and at the EOC for overall recovery efforts and coordination.

Overall, INL conducted a successful evaluated drill that challenged the ERO teams and the emergency responders, and enabled them to effectively demonstrate their ability and capability to effectively respond to a BDBE event.

Appendix A

Exercise Scenario

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Appendix A

Exercise Scenario

Background

It is a normal work day at all INL facilities. Normal work activities are beginning.

Start

At approximately 0800, an earthquake occurs on the Lost River fault with a 7.5 magnitude. Standing waves move across INL and strong ground shaking occurs at all INL facilities. In-town facilities are not impacted. As a result, significant damage occurs at several facilities resulting in injuries to personnel and releases of radiological material and hazardous material at various facilities. Some road damage is reported restricting passage around and within the INL requiring ERO personnel to determine alternate routes of travel.

Phone calls are received in the INL FAC and WCC. INL FD and emergency medical services begin their response actions. Facility EROs across INL are activated in conjunction with the EOC and the JIC. PAs are determined and implemented as needed. OEs are declared and offsite notifications are made. The ED will coordinate offsite notifications as applicable. An area command will be established and priorities determined with resources allocated accordingly.

An aftershock will occur off of the southern tip of the Lost River fault with a magnitude of approximately 6.5 that will cause power, Internet, and telephones communications to be lost to most INL Site facilities. Radio use will be limited to “point-to-point” communications. Cell phones and satellite phones will be available. During this time it will be determined the ATR canal is draining at a faster rate than can be maintained. PA/PARs for other INL facilities will be implemented. An evacuation of ATR non-essential personnel will occur. All other facility evacuations will be simulated.

Consequence assessment personnel in the EOC, in conjunction with NARAC personnel, will develop plume projection models. The INL SMT will be deployed to take samples and report the information to the EOC consequence assessment specialist.

Some injured personnel will be transported to CFA medical, others will be simulated as being transported. Facilities that cannot be reached by EMS personnel will determine and utilize “self-help” to assist with the treatment and transport of injured personnel.

Reentry planning will be discussed and recovery managers will be identified at some facilities.

Press releases will be developed in the EOC and provided to the JIC. The JIC will field calls that are received from personnel representing other media agencies and concerned citizens. Rumors will be addressed and corrected as they are identified.

The drill director will contact each lead controller and verify that all objectives have been met or have attempted to be met and obtain concurrence for termination of the drill. When verification is complete, the drill will be terminated, drill windows closed at each facility, and hot-wash critiques held.