ATTACHMENT 71114.08

INSPECTABLE AREA: Exercise Evaluation-Scenario Review

CORNERSTONE: Emergency Preparedness

INSPECTION BASES: Licensees conduct drills and exercises to develop and maintain key skills in the principle functional areas of emergency response, and to identify and correct weaknesses in their ERO performance. These activities improve the licensees' capabilities to protect public health and safety in the unlikely event of a radiological emergency. Licensees demonstrate their capabilities to implement Emergency Plans (E-Plans) and to critique and identify weaknesses observed during these drills and exercises.

Section IV.F.2. of Appendix E to 10 CFR Part 50 establishes requirements for the conduct and critique of these drills and exercises. Licensees are required to conduct an exercise of their onsite emergency plans with participation of the offsite response organizations (OROs) biennially. The NRC inspects licensees' performance response during biennial exercises, and FEMA evaluates ORO performance.

For an exercise to be effective in developing key skills, identifying and correcting weakness, rigorous and diverse scenarios are essential. The exercise scenario and its play must provide the ERO in all emergency response facilities (ERF), the opportunity to demonstrate their proficiency in the key skills necessary to implement the principle functional areas.

Licensees are required to submit exercise scenarios under § 50.4 at least 60 days before use in an exercise.

71114.08-01 INSPECTION OBJECTIVE

Review licensee submitted biennial exercise scenarios and objectives to ensure the exercise demonstration provides opportunities to demonstrate the licensee's capability to adequately perform key skills to protect public health and safety in the unlikely event of a radiological emergency.

71114.08-02 INSPECTION REQUIREMENTS

Note: Licensees may structure exercise scenario packages differently and this should be found acceptable, provided that the exercise, as conducted, will meet requirements of 10 CFR Part 50, Appendix E, § IV.F.2, and the facility E-Plan.

02.01 Verify the submitted scenario package has included: exercise objectives, a timeline of exercise events, a description of imbedded drills, a description of key injects and messages, the expected ERO and ORO participation, and plant and player safety considerations.

02.02 Verify the scenario has required minimum exercise objectives and identification of performance opportunities.

02.03 Review scenario comments with FEMA representative to ensure that scenario comments are consistent.

02.04 Review licensees records/schedule for scenario elements required to be demonstrated, during biennial exercises, over the course of an exercise cycle and opportunities for all ERO teams to demonstrate proficiency in the key skills necessary to implement the principle functional areas of emergency response, including those skills specific to emergency response duties in the control room, technical support center, onsite support center, emergency operations facility, and joint information center (JIC).

02.05 Provide any exercise comments, questions or concerns to the licensee no later than 30 days prior to the scheduled exercise date.

71114.08-03 INSPECTION GUIDANCE

NOTE: The following items are coordinated with Exhibit 1 as a tool for the inspector to perform their review.

03.01 Verify scenario submittal is complete.

Note – Scenarios are submitted per 10 CFR § 50.4. The document is entered into ADAMS by the Document Control Desk as not publicly available. Confidentiality of the scenario shall be maintained and a SUNSI review (for purposes of making the document public) shall not be performed until after completion of the exercise. Licensees may include a cover sheet with wording similar to, “Treat document as sensitive information until exercise completion. Document may only be made public by a Regional EP Inspector or NSIR/DPR/EP following completion of the exercise.” After the exercise and following a SUNSI review, this page may be removed/redacted, the file version updated in ADAMS and the document may be made publicly available.

03.02 Review the scenario submittal for the following:

a. The minimum expected exercise elements are included in the scenario.

b. The scenario is sufficiently varied from those used in the last two years of biennial exercises, off-year exercise(s), integrated response facility drills etc.

c. The exercise objectives are detailed and measurable and/or observable.

d. The licensee's exercise objectives and scenario provide an adequate framework for the type and scope of exercise proposed.

e. That ERO pre-conditioning is avoided.

f. To the extent possible, scenario and exercise play requires the ERO "earn" event information.

g. Clearly identified Drill/Exercise Performance Indicator (DEP PI) opportunities.

Note - Technical evaluations of the scenario data and exercise control are the responsibility of the licensee. Review and verification of technical details such as, engineering operational parameters, engineering logic, source term, radiological instrumentation data, plant parameter units and data/injects provided by controllers is the responsibility of the licensee. Problems with the licensee's review and verification may be revealed during the exercise or its critique and will be handled by IP71114.01. The inspector should only evaluate the scenario for its relative credibility and timing of events.

03.03 Get the contact information for the FEMA Site Specialist from the Regional State Liaison Officer (RSLO). Contact the FEMA Site Specialist to confirm that offsite objectives are consistent with exercise frequency requirements, testing communication interfaces between onsite and offsite facilities, and testing of the public notification systems.

03.04 Evaluate the ability of the scenario to provide opportunities for the ERO to demonstrate proficiency in key skills by ensuring:

a. Opportunities for the ERO to perform their key skills as applicable to their emergency response duties in the TSC, OSC, EOF, and JIC are provided.

b. Scenario data and progression of events are credible, logical and challenges the ERO to demonstrate their proficiency, particularly in accident assessment. The demands of the onsite and offsite exercise objectives will likely preclude complete fidelity between the scenario and the actual ERO response. The inspector will need to use judgment, based on experience, in performing this review. Examples of items to consider include:

1. However incredible a simulated event or condition may be, exercise play should be consistent with that event or condition.

2. If the core is simulated as being melted, the corresponding in-plant radiation levels should increase comparably.

3. If a loss of AC power source is simulated, equipment and instrumentation that relies on that source should not be considered operable.

4. A release should not be simulated as being stopped until the cause of the release has been corrected or mitigated.

5. Do simulated releases begin before the failures that cause the release occur?

6. Is the simulated field monitoring data consistent with simulated wind directions and plume transit times (e.g., the dose rate increases before the plume reaches that point)?

7. Is the timing of scenario events comparable with the time it would take to ERO to perform particular tasks under actual emergency conditions (e.g., time spent obtaining an RWP, getting a work briefing, donning personal protective equipment, obtaining tools and parts, etc.)?

c. In addition to the above, hostile action based (HAB) scenarios should be reviewed for the following considerations:

1. HAB scenarios should vary the radiological release from exercise to exercise.

2. Mitigative measures should commence after the simulated active attack has ceased but before Local Law Enforcement Agencies (LLEA) have swept the site for safe entry or declared the site secure. Securing the site may take days, and it is important that licensees train personnel to respond in the aftermath of hostile action events. Licensees shall demonstrate planning for and prioritization of mitigative action teams and protection of team personnel in efforts to prevent or ameliorate core damage or containment failure.

3. The planning necessary to conduct a HAB exercise will challenge expectations for scenario confidentiality. For example, a drill or practice exercise involving a hostile action scenario may be conducted prior to the biennial exercise. In addition, prior reviews and approvals by various site personnel and OROs may be needed to involve offsite responders and other resources normally associated with hostile action response. Although some ERO members may infer that a hostile action scenario will be used in the biennial exercise, participants should not have knowledge of scenario details (i.e., specific events, timelines, or related information).

Scenarios used for hostile action biennial exercises must be sufficiently different from those used in drills/exercises during the previous 2 years. Specifically, the elements and consequences of the hostile action must be varied (e.g., attack type or direction, number of attackers, attack timeline, damage, casualties, offsite consequences, etc.). Provided that the above requirements are met, it is acceptable for the same ERO members to participate in hostile action drills or practice exercises and the subsequent biennial exercise.

4. 10 CFR Part 50 does not specify a frequency for the conduct of the hostile action biennial exercise during the eight year exercise cycle. It is the expectation of the NRC that licensees not plan a hostile action exercise at the beginning of an exercise cycle and wait to the end of the next exercise cycle to conduct their next hostile action exercise.

d. Review the scenario against the licensee's records/schedule for scenario elements performed and required to be demonstrated during the exercise cycle.

03.05 Provide any exercise comments, questions or concerns to the licensee.

a. If during this review, the inspector determines that the scenario may not be a sufficient test of the Plan, notify NRC Regional Management and then the licensee of the concern.

b. Provide any exercise comments, questions or concerns to the licensee no later than 30 days prior to the scheduled exercise date.

71114.08-04 RESOURCE ESTIMATE

The estimated time to complete this inspection procedure is 12-16 hours. The time expended for this review is to be reported as direct inspection time.

71114.08-05 PROCEDURE COMPLETION

This procedure is considered complete when all the inspection requirements listed in the procedure have been satisfied. For the purpose of reporting completion in the Reactor Program System (RPS), the sample size is defined as one (1). The inspector shall ensure that a sample size of one (1) is reported in the RPS, Item Reporting (IR), and completion noted in the RPS, Inspection Planning (IP), when the procedure is completed in its entirety. However, reporting of sample sizes and inspection completion status shall reflect the same level of sensitivity (i.e., "Official Use Only - Security-Related Information") as inspection planning and documentation issues and shall not appear in any publicly available document.

END

Exhibit:
Scenario Review Checklist

Attachment:
Revision History for IP 71114.08

Exhibit 1 – Scenario Review Checklist (Continued)

Exercise Location:_____

Planned Exercise Date:_____30 days before:_____60 days before:_____

03.01 Verify the scenario submittal is complete by including:	**Notes**
a. A timeline of exercise events	
b. A description of any imbedded drills	
c. A description of key injects and messages	
d. The expected ERO and ORO participation	
e. Plant and player safety considerations	
03.02 Review the scenario for the following**:**	**Notes**
a. Verify scenario contains minimum expected elements:	
1. Event classification.	
2. Timely notification of offsite authorities.	
3. PAR development (development of PARs involving public evacuation or sheltering is required only in exercises that include a General Emergency).	
4. Radiological assessment.	
5. Shift staff response to accident transients or other events that meet EAL criteria while implementing the emergency plan.	
6. ERO response and ERF activation following declared emergencies	
7. Integration of licensee response with OROs to include briefings, coordination of worker protection, and, as appropriate to the scenario, coordination of public protective actions radiological release monitoring, and offsite response to the site.	
8. Communications between onsite and offsite ERFs	
9. Dissemination of information to the public via media channels and press briefings.	
10. Development and implementation of radiological or physical protection (i.e., in response to HAB) protective actions for onsite workers as	

Exercise Location:_____

Planned Exercise Date:_____30 days before:_____60 days before:_____

appropriate to the scenario.	
03.02 Review the scenario for the following: (continued)	**Notes**
11. Operational and engineering assessment of accident sequences.	
12. Accident mitigation by simulated equipment repair. This must include mechanical, electrical, and/or instrumentation and control activities. The scenario should allow some repairs to be successful, but must provide the opportunities to demonstrate mitigation planning, repair execution and radiological control support of repair teams.	
b. The scenario is sufficiently varied from the last biennial exercise, and any off-year exercise(s), integrated response facility drill, etc. used in the last 2 years by ensuring that:	
1. No more than one EAL is common to the previous exercise or any practice drills/exercises conducted in preparation for this exercise.	
2. Failure mechanisms used for reaching initiating conditions and the failed equipment is varied to the extent practical.	
3. The exercise scenario has not been used as a drill within the last 2 years, or used for a practice drill for the present biennial exercise.	
c. Exercise objective detail provides:	
1. A measurable and/or observable criteria	
2. Sufficient detail to support an objective evaluation of ERO performance	
3. A description of adequate or acceptable level of ERO response.	
d. The licensee's exercise objectives and scenario provide an adequate framework for the type and scope of exercise proposed.	
e. That ERO pre-conditioning is avoided by:	
1. Not re-using specific scenarios in an inspection cycle	
2. Ensuring scenario timeline and or initial conditions do not provide obvious clues of impending equipment or system failures.	
f. To the extent possible, scenario and exercise play requires the ERO “earn”	

Exercise Location:_____

Planned Exercise Date:_____30 days before:_____60 days before:_____

event information	
g. DEP PI opportunities are clearly identified	
	Notes
03.03 Discuss exercise scenario and objectives with FEMA.	
03.04 Evaluate the ability of the scenario to provide opportunities for the ERO to demonstrate proficiency in key skills by ensuring:	**Notes**
a. Opportunities provided during drill and or exercise to develop and maintain key emergency response skills as follows:	
1. Demonstration of all functions in each ERF (e.g., all ERFs that are responsible for dose assessment perform those duties in response to a radiological release).	
2. The use of alternative facilities to stage the ERO for rapid activation during a hostile action.	
3. Real-time staffing of facilities during off-hours (i.e., 6:00 p.m. to 4:00 a.m.).	
4. Provide medical care for injured, contaminated personnel (every two years).	
5. Response to essentially 100% of EAL initiating conditions.	
6. Response to actual industry event sequences appropriate for the nuclear plant technology (e.g., BWR or PWR).	
7. All licensee ERO teams must be provided the opportunity to demonstrate key skills within the scope of their duties.	
8. Use of procedures developed in response to an aircraft threat and in compliance with 10 CFR 50.54(hh)(1).	
9. Use of guidance, strategies, and procedures developed in compliance with 10 CFR 50.54(hh)(2) and the simulated deployment and use of the equipment associated with these strategies intended to maintain or	

Exercise Location:_____

Planned Exercise Date:_____30 days before:_____60 days before:_____

restore core cooling, containment, and/or spent fuel pool cooling.	
b. Scenario data and progression of events are credible, logical and challenges the ERO to demonstrate their proficiency, particularly in accident assessment.	
c. In addition to the above, hostile action based (HAB) scenarios should be reviewed for the following considerations:	
1. HAB scenarios should vary the radiological release from exercise to exercise.	
2. Mitigative measures should commence after the simulated active attack has ceased but before Local Law Enforcement Agencies (LLEA) have swept the site for safe entry or declared the site secure.	
3. The planning necessary to conduct a HAB exercise will challenge expectations for scenario confidentiality. Scenarios used for hostile action biennial exercises must be sufficiently different from those used in drills/exercises during the previous 2 years. Specifically, the elements and consequences of the hostile action must be varied (e.g., attack type or direction, number of attackers, attack timeline, damage, casualties, offsite consequences, etc.). Provided that the above requirements are met, it is acceptable for the same ERO members to participate in hostile action drills or practice exercises and the subsequent biennial exercise.	
d. Review records/schedule required for the eight year exercise scenario cycle to include:	
1. Response to hostile action, including interface with LLEAs.	
2. Engineering assessment, repair plan development, and physical repair of critical equipment damaged by hostile action after the active attack, but before the site is secured by LLEAs.	

Exercise Location:_____

Planned Exercise Date:_____30 days before:_____60 days before:_____

3. Response to one scenario with no radiological release or an unplanned minimal radiological release that does not require evacuation or sheltering of the public.	
4. Response to a scenario with radiological releases that require evacuation and/or sheltering of the public.	
5. Response to a scenario that begins with a Site Area Emergency or General Emergency, or escalates rapidly (within 30 minutes) to an SAE or GE.	
6. Successful simulated repair of simulated damaged equipment to prevent or mitigate core damage, reactor vessel loss, and/or containment loss.	
7. Demonstration of the ability to mitigate an accident caused by hostile action or other initiators, through the simulated use of equipment, procedures, and strategies developed in compliance with 10 CFR 50.54(hh)(2).	
8. Demonstration of each of the licensee's site specific reactor technology or vintage at least once during the exercise cycle.	
	Notes
03.05 Provide any exercise comments, questions or concerns to the licensee no later than 30 days prior to the scheduled exercise date.	

ATTACHMENT

Revision History - IP 71114.08

Commitment Tracking Number	Issue Date	Description of Change	Training Needed	Training Completion Date	Comment Resolution Accession Number
N/A	XX/XX/XX	New Procedure	Yes - Provided at EP Face to Face counter-part meeting	09/09/2011	