U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

MAR 23 2012

Mr. Elmo E. Collins, Jr.
Regional Administrator
U.S. Nuclear Regulatory Commission Region IV
1600 East Lamar Boulevard
Arlington, Texas 76011

Dear Mr. Collins:

I am forwarding a copy of the Final After Action Report for the Ingestion Phase Exercise held in Orange County on April 14, 2011, May 18, 2011, and December 14, 2011, for the San Onofre Nuclear Generating Station (SONGS). The purpose of this exercise was to assess the level of state and local preparedness in responding to a radiological emergency. The final exercise report was prepared by the U.S. Department of Homeland Security's Federal Emergency Management Agency, Region IX Radiological Emergency Preparedness Program staff.

No deficiencies were identified during this exercise. There were four Areas Requiring Corrective Action (ARCA) identified as a result of the exercise; three ARCAs were corrected. We will monitor the correction of the remaining ARCA. A detailed discussion of these ARCAs can be found in Section 3.3 of the Final Report.

Based on the evaluation of the April 14, 2011, May 18, 2011, and December 14, 2011, Ingestion Phase Exercise, the offsite radiological emergency response plans for the state of California and the affected local jurisdictions site-specific to SONGS can be implemented, and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at SONGS.

Therefore, the Code of Federal Regulations, Title 44 Part 350 interim approval of the offsite radiological emergency response plans and preparedness for the state of California, site-specific to SONGS, will remain in effect.

I would also like to take this opportunity to acknowledge the many individuals that participated in this successful exercise. Their dedication to this program was clearly evident.

If you have any questions or need additional information, please contact me at (510) 627-7100. Your staff may also contact Mr. Richard Echavarria, SONGS Site-Specialist, at (510) 627-7217, or Mr. James Macaulay, Acting Radiological Assistance Committee Chair, at (510) 627-7009.

Sincerely,

Karen E. Barnes

for Nancy Ward
Regional Administrator
FEMA Region IX

Enclosure

cc: NRC Headquarters Document Control Desk
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Vanessa Quinn, Chief
Radiological Emergency Preparedness Branch
FEMA Headquarters

U.S. Department of Homeland Security
Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

FEMA

MAR 23 2012

Mr. Mark Ghilarducci
Secretary
California Emergency Management Agency
3650 Schriever Avenue
Mather, CA 95655

Dear Mr. Ghilarducci:

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Based on the evaluation of the April 14, 2011, May 18, 2011, and December 14, 2011, Ingestion Phase Exercise, the offsite radiological emergency response plans for the state of California and the affected local jurisdictions site-specific to SONGS can be implemented, and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at SONGS.

Therefore, the Code of Federal Regulations, Title 44 Part 350 interim approval of the offsite radiological emergency response plans and preparedness for the state of California, site-specific to SONGS, will remain in effect.

I would also like to take this opportunity to acknowledge the many individuals that participated in this successful exercise. Their dedication to this program was clearly evident.

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Sincerely,

for Nancy Ward
Regional Administrator
FEMA Region IX

Enclosure

San Onofre Nuclear Generating Station

After Action Report/Improvement Plan

Exercise Dates – April 14, 2011, May 18, 2011, and December 14, 2011

Radiological Emergency Preparedness (REP) Program

FEMA

Published March 12, 2012

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San Onofre Nuclear Generating Station

After Action Report/Improvement Plan

Published March 12, 2012

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EXECUTIVE SUMMARY

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Region IX National Preparedness Division - Technological Hazards Branch evaluated an Ingestion Pathway Exercise conducted within the 50-mile Ingestion Pathway Zone (IPZ) around the San Onofre Nuclear Generating Station (SONGS) on April 14, 2011, May 18, 2011, and December 14, 2011.

The most recent biennial plume phase exercise at this site was conducted on April 12, 2011. The qualifying emergency preparedness exercise was conducted on May 13, 1981.

The purpose of the exercise was to assess the level of state and local preparedness in response to a simulated radiological emergency at SONGS. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of state and local Radiological Emergency Response Plans (RERP) and procedures.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise.

Protecting the public health and safety is the full-time job of some of the exercise participants and additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

This report contains the final evaluation of the exercise. The exercise participants, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately demonstrated the ability to execute those plans. There were no Deficiencies and four Areas Requiring Corrective Action (ARCA) identified during the course of the exercise; three ARCAs were corrected. The 2011 SONGS Ingestion Pathway Exercise Improvement Plan contains the recommended corrective action plan for the remaining ARCA.

SECTION 1. EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

San Onofre Nuclear Generating Station Ingestion Pathway Exercise

Exercise Dates

April 14, 2011, May 18, 2011, and December 14, 2011

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

Sara Kaminske
Exercise Coordinator
Orange County Sheriff's Department
Assistant Emergency Manager
2644 Santiago Canyon Road
Silverado, CA 92676

Richard Garcia
Technical Specialist
Southern California Edison
Emergency Services Coordinator
P.O.Box 128
San Clemente, CA 92672

Bill Potter
Senior Emergency Services Coordinator
3650 Schriever Avenue
Mather, CA 95655

Richard Echavarria
Senior Site Specialist
Radiological Emergency Preparedness Program
FEMA Region IX
Oakland, CA 94607

1.3 Participating Organizations

The following agencies and organizations participated in the San Onofre Nuclear Generating Station exercise:

State Jurisdictions

California Emergency Management Agency

California Department of Fish and Game

California Department of Food and Agriculture

California Department of Public Health

California Department of Parks and Recreation, Orange Coast District

California Department of Transportation

California Highway Patrol

Risk Jurisdictions

Capistrano Unified School District

City of Dana Point

City of San Clemente

City of San Juan Capistrano

Los Angeles County Agricultural Commissioner

Los Angeles County Department of Health Services

Orange County Agricultural Commissioner

Orange County Health Care Agency

Orange County Fire Authority

Oceanside Fire Department

Orange County Sheriff - Coroner Department

Orange County Transportation Authority

Riverside County Agricultural Commissioner's Office

Riverside County Department of Public Health

Riverside County Environmental Health

Riverside County Fire Department - Office of Emergency Services

Riverside County Sheriff's Department

San Bernardino County Department of Agriculture, Weights and Measure

San Bernardino Department of Public Health

San Diego County Agriculture, Weights and Measure

San Diego County Department of Animal Services

San Diego County Communications Office

San Diego County Department of Environmental Health

San Diego County Health and Human Services

San Diego County Office of Emergency Services

San Diego County Planning and Land Use

San Diego County Public Safety Group

San Diego County Sheriff's Department

San Diego State University

Private Sector/Volunteer Organizations

American Red Cross

San Diego Gas & Electric

San Onofre Nuclear Generating Station

Southern California Edison

Federal Jurisdictions

Center for Disease Control and Prevention

Federal Emergency Management Agency

Food and Drug Administration

Nuclear Regulatory Commission

U.S. Department of Agriculture

Marine Corps Base Camp Pendleton

SECTION 2. EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

FEMA Region IX evaluated the exercise to assess the capabilities of local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving SONGS. The purpose of this After Action Report (AAR) is to present the results and findings on the performance of the Offsite Response Organizations (ORO) during a simulated radiological emergency.

2.2 Exercise Objectives, Capabilities and Activities

The exercise evaluation area criteria, contained in the FEMA Federal Register Notice, "Radiological Emergency Preparedness Exercise Evaluation Methodology," dated April 25, 2002 represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev.1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.

The objectives of this exercise are as follows:

Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG-0654: A.4, D.3, 4; E.1, 2; H.4)

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654: A.1.d, A.2.a, b)

Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654: F.1, 2)

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG-0654: H.7, 10; J.10.a, b, e; J.11; K.3.a)

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654: J.10.e, f; K.4)

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and off-site environmental conditions. (NUREG-0654: I.8, 10; Supplement 3) Criterion 2.b.2:

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654: J.9; J.10.d, e)

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654: K.3.a, b)

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record-keeping of the administration of KI for emergency workers and institutionalized individuals is maintained. (NUREG-0654: J.10.e)

Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective action. (NUREG-0654: J.10.c, d, g)

Criterion 3.c.2: OROs/School officials implement protective actions for schools. (NUREG-0654: J.10.c, d, g)

Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654: J.10.g, j)

Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654: J.10.k)

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654: H.10; I.7, 8, 9)

Criterion 4.a.2: Field monitoring teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654: I.8, 11; J.10.a; H.12)

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654: I.9)

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654, C.3; J.11)

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized off-site emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D & NUREG-0654: E.5, 6, 7)

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized off-site emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654: E.6, Appendix 3.B.2.c)

Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654: E.5, 7; G.3.a; G.4.c)

2.3 Scenario Summary

This section contains a summary of the simulated sequence of events used as the basis for invoking emergency response actions by OROs, submitted to FEMA by the state of California and SONGS.

The exercise begins with SONGS Unit 2 Train B Diesel Generator suffering a catastrophic failure. Within fifteen minutes of this event, SONGS declares an Alert and notifies the jurisdictions within the IPZ. In an unrelated event, the Control Room receives a Unit 2 vibration and loose parts alarm. Subsequently, Unit 2 Reactor Coolant Pump #2 suffers a sheared shaft, resulting in a 380 gallon per minute release of reactor coolant into containment. A chemistry sample taken approximately thirty minutes later indicates the loose parts damage more than one percent of the fuel in the reactor vessel. As a result of the damage to the reactor fuel, SONGS declares a Site Area Emergency. With the reactor coolant leak increasing significantly, and containment pressure levels rising, SONGS declares a General Emergency. A containment purge valve is moved off its seat as a result of increased pressure in the containment, releasing radioactive material to the environment.

SECTION 3. ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities that participated in the April 14, 2011, May 18, 2011, and December 14, 2011, Ingestion Pathway Exercise to test the offsite emergency response capabilities of state and local government agencies for the SONGS IPZ.

Each jurisdiction and functional entity was evaluated on its demonstration of criteria contained in the exercise evaluation areas as outlined in the Federal Register, Vol.67, No. 80 "FEMA-Radiological Emergency Preparedness: Exercise Evaluation Methodology" (April 25, 2002). Detailed information on the extent-of-play agreement used in this exercise is found in Appendix D of this report.

3.2 Summary Results of Exercise Evaluation

The matrix illustrated in Table 3.1, presents the status of all exercise evaluation area criteria that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status is indicated by the use of the following letters:

M - Met (No Deficiency or ARCA assessed and no unresolved ARCA from prior exercises)

D - Deficiency assessed

A – ARCA assessed or unresolved ARCA from prior exercises

N - Not Demonstrated

Presented below are definitions of the terms used in this section relative to criteria demonstration status.

a. Met – Listing of the demonstrated exercise evaluation area criteria under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.
b. Deficiency – Listing of the demonstrated exercise evaluation area criteria under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
c. Area Requiring Corrective Action – Listing of the demonstrated exercise evaluation area criteria under which one or more ARCAs were assessed during the current exercise. Included is a description of the ARCAs assessed during this exercise and the recommended corrective actions to be demonstrated before or during the next Ingestion Phase exercise.
d. Not Demonstrated – Listing of the exercise evaluation area criteria that were scheduled to be demonstrated during this exercise, but were not demonstrated and the reason they were not demonstrated.

The following are classifications of the types of issues that are discussed in this report:

A Deficiency is defined in the FEMA August 2002, Interim REP Program Manual as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

An ARCA is defined in the FEMA August 2002, Interim REP Program Manual as "...an observed or identified inadequacy of organizational performance in a exercise that is not considered, by itself, to adversely impact public health and safety."

FEMA has developed a standardized system for numbering issues. This system is used to achieve consistency in numbering exercise issues among FEMA Regions and site specific exercise reports within each Region. It is also used to expedite tracking of exercise issues on a nationwide basis.

The identifying number for Deficiencies and ARCAs includes the following elements, with each element separated by a hyphen (-).

a. Plant Site Identifier – A two-digit number corresponding to the Utility Billable Plant Site Codes.
b. Exercise Year – The last two digits of the year the exercise was conducted.
c. Evaluation Area Criterion – A letter and number corresponding to the criteria in the FEMA REP Exercise Evaluation Methodology.
d. Issue Classification Identifier – D = Deficiency, A = ARCA
e. Exercise Issue Identification Number – A separate two digit indexing number assigned to each issue identified in the exercise.

DATE: 2011-04-14, 2011-05-18, 2011-12-14 SITE: San Onofre Nuclear Generating Station, CA A: ARCA, D: Deficiency, M: Met, N: Not Demonstrated		State of California	Dana Point	San Clemente	San Juan Capistrano	Orange County	Riverside County	San Diego County	San Bernardino County	Los Angeles County
Emergency Operations Management										
Mobilization	1a1									
Facilities	1b1									
Direction and Control	1c1	M	M	M	M	M	M	M	M	M
Communications Equipment	1d1									
Equip & Supplies to support operations	1e1									
Protective Action Decision Making										
Emergency Worker Exposure Control	2a1	M				M	M	M	M	M
Radiological Assessment and PARs	2b1									
Decisions for the Plume Phase -PADs	2b2									
PADs for protection of special populations	2c1					M				
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1	M				M	M	M	M	M
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1	M	M	M	M	M		M		
Protective Action Implementation										
Implementation of emergency worker exposure control	3a1	M				M		M		
Implementation of KI decision	3b1									
Implementation of protective actions for special populations - EOCs	3c1					M				
Implementation of protective actions for schools	3c2					M				
Implementation of traffic and access control	3d1	M	M	M	M	M				
Impediments to evacuation are identified and resolved	3d2									
Implementation of Ingestion Pathway decisions - availability/use of info	3e1	M				M	M	M	M	M
Materials for Ingestion Pathway PADs are available	3e2	M				M	M	M	M	M
Implementation of relocation, re-entry, and return decisions	3f1	M	M	M	M	M		M		
Field Measurement and Analysis										
Adequate equipment for plume phase field measurements	4a1									
Field Teams obtain sufficient information	4a2									
Field Teams manage sample collection appropriately	4a3									
Post plume phase field measurements and sampling	4b1									
Laboratory operations	4c1									
Emergency Notification and Public Info										
Activation of the prompt alert and notification system	5a1									
Activation of the prompt alert and notification system - Fast Breaker	5a2									
Activation of the prompt alert and notification system - Exception Areas	5a3									
Emergency information and instructions for the public and the media	5b1	M	M	M	M	M	M	M	M	M
Support Operations/Facilities										
Mon / decontamination of evacuees and emergency workers, and registration of evacuees	6a1									
Mon / decontamination of emergency worker equipment	6b1									
Temporary care of evacuees	6c1									
Transportation and treatment of contaminated injured individuals	6d1									

DATE: 2011-04-14, 2011-5-18, 2011-12-14 SITE: San Onofre Nuclear Generating Station, CA A: ARCA, D: Deficiency, M: Met, N: Not Demonstrated		Capistrano Unified School District	California Department of Public Health Laboratory	State Dose Assessment Center	FST A	FST B	California Department of Public Health SRPU
Emergency Operations Management							
Mobilization	1a1						
Facilities	1b1						
Direction and Control	1c1			M	M	M	M
Communications Equipment	1d1				M		M
Equip & Supplies to support operations	1e1		M	M	M	M	M
Protective Action Decision Making							
Emergency Worker Exposure Control	2a1						M
Radiological Assessment and PARs	2b1						
Decisions for the Plume Phase -PADs	2b2						
PADs for protection of special populations	2c1	M					
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1			M			
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1			M			
Protective Action Implementation							
Implementation of emergency worker exposure control	3a1		M		M	A	M
Implementation of KI decision	3b1						
Implementation of protective actions for special populations - EOCs	3c1						
Implementation of protective actions for schools	3c2	M					
Implementation of traffic and access control	3d1						
Impediments to evacuation are identified and resolved	3d2						
Implementation of Ingestion Phase decisions - availability/use of info	3e1						
Materials for Ingestion Phase PADs are available	3e2			M			
Implementation of relocation, re-entry, and return decisions	3f1			M			
Field Measurement and Analysis							
Adequate equipment for plume phase field measurements	4a1						
Field Teams obtain sufficient information	4a2						
Field Teams manage sample collection appropriately	4a3						
Post plume phase field measurements and sampling	4b1				M	M	M
Laboratory operations	4c1		M				
Emergency Notification and Public Info							
Activation of the prompt alert and notification system	5a1						
Activation of the prompt alert and notification system - Fast Breaker	5a2						
Activation of the prompt alert and notification system - Exception Areas	5a3						
Emergency information and instructions for the public and the media	5b1						
Support Operations/Facilities							
Mon / decontamination of evacuees and emergency workers, and registration of evacuees	6a1						M
Mon / decontamination of emergency worker equipment	6b1						M
Temporary care of evacuees	6c1						
Transportation and treatment of contaminated injured individuals	6d1						

3.3 Criteria Evaluation Summaries

3.3.1 California Jurisdictions

3.3.1.1 State of California

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.a.1, 2.d.1, 2.e.1, 3.a.1, 3.d.1, 3.e.1, 3.e.2, 3.f.1, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES RESOLVED: None
g. PRIOR ISSUES UNRESOLVED: None

3.3.1.2 California Department of Public Health (CDPH) Drinking Water and Radiation Laboratory Branch

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 3.a.1, 4.c.1.
b. AREA REQUIRING CORRECTIVE ACTION: 4.c.1.

ISSUE NO: 51-11-4c1-A-2

CRITERION: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654, C.3; J.11)

CONDITION: The chemist preparing samples prior to analysis did not change his gloves after completion of preparing the first soil sample and starting the preparation of the second sample.

POSSIBLE CAUSE: Failure to follow normal contamination control considerations.

REFERENCE: NUREG C.3; J.11

EFFECT: The potential to cross-contaminate the second soil sample.

CORRECTIVE ACTION DEMONSTRATED: When preparing samples, the preparer's gloves should be changed between samples and at other times that would minimize the opportunity to cross-contaminate samples or contaminate equipment.

The controller halted the demonstration and explained that the chemist preparing the samples needed to change gloves between samples. The chemist agreed, he changed his gloves, and the demonstration continued. For the remainder of the

drill, the chemist was very cognizant of changing his gloves and changed his gloves between samples and at all other appropriate times.

c. DEFICIENCY: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES RESOLVED: None

f. PRIOR ISSUES UNRESOLVED: None.

3.3.1.3 State Dose Assessment Center (SDAC)

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 1.e.1, 2.e.1, 3.e.2, 3.f.1.

b. AREA REQUIRING CORRECTIVE ACTION: None

c. DEFICIENCY: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES RESOLVED: None

f. PRIOR ISSUES UNRESOLVED: None

3.3.1.4 State Field Sampling Team A

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 4.b.1.

b. AREA REQUIRING CORRECTIVE ACTION: None

c. DEFICIENCY: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES RESOLVED: None

f. PRIOR ISSUES UNRESOLVED: None

3.3.1.5 State Field Sampling Team B

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 1.e.1, 4.b.1.

b. AREA REQUIRING CORRECTIVE ACTION: 3.a.1, 4.b.1.

ISSUE NO: 51-11-3a1-A-3

CRITERION: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plan and procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.a, b)

CONDITION: A field team member was issued a thermoluminescent dosimeter (TLD) by the Department of Energy Radiological Assistance Program (RAP) team member and no documentation was completed.

POSSIBLE CAUSE: Each of the team members are issued TLDs for their normal day-to-day job functions. These TLDs were used for dose record as part of the exercise. One team member did not have her TLD with her and was given one by the Federal RAP on site. The team member may have assumed the TLD used was simulating her normally worn TLD, though that was never made clear.

REFERENCE: NUREG-0654, K.3.a, b; CDPH Nuclear Emergency Response Procedure: SDAC Worker Radiation & Monitoring DRAFT FINAL 6/10/10 8.8.2, 10.2 (pages 11 & 15).

EFFECT: If not simulating her day-to-day TLD, the worker would have no paper record of which TLD she was issued by the RAP and no way to track the dose received during the sampling event.

RECOMMENDATION: The team member should complete the proper forms when issued a TLD.

ISSUE NO: 51-11-4b1-A-4

CRITERION: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision making. (NUREG-0654, I.8; J.11)

CONDITION: A field team member did not don a second pair of protective gloves prior to handing samples over to sample receipt staff as is prescribed in the procedures and check list detailed below.

POSSIBLE CAUSE: Field Team 2 was assigned task of delivering samples to sample receipt area. The team did not "double glove" since they were not collecting samples. The team advised the evaluator two pairs of protective gloves would be worn for sampling to prevent cross-contamination and the outer pair removed prior to re-entering the vehicle. When the team arrived at the sample drop-off area the sample deliverer simply forgot to put on an outer pair of gloves.

REFERENCE: NUREG-0654, J.11; FEMA REP 13, 4.2.1 pages 42-43; CDPH Nuclear Emergency Response Procedure No. E-81: SDAC Field Team Standard Operating Procedures Attachment B, C.

EFFECT: If inner gloves were contaminated, the team member ran the risk of cross-contaminating the sample and sample receipt area.

CORRECTIVE ACTION DEMONSTRATED: Play was halted and the need for the second pair of gloves was discussed. The team member explained that samples were packaged in mutli-layered containers limiting cross-contamination to the samples. The Field Team 2 member also checked hands frequently by frisking with a Ludlum Model 3 meter equipped with a pancake probe. The controller indicated outer gloves were prescribed in the procedure checklist. The situation was re-demonstrated successfully.

c. DEFICIENCY: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES RESOLVED: None

f. PRIOR ISSUES UNRESOLVED: None

3.3.1.6 California Department of Public Health Sampling Receipt and Processing Unit

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 1.d.1, 1.e.1, 2.a.1, 3.a.1, 4.b.1, 6.a.1, 6.b.1.

b. AREA REQUIRING CORRECTIVE ACTION: 4.b.1.

ISSUE NO: 51-11-4b1-A-5

CRITERION: The field teams demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision making. (NUREG-0654, I.8; J.11)

CONDITION: When the water sample was being received, the exterior of the outer bag was surveyed and found to be free of loose contamination. However the exterior of the sample bag, inside the outer bag, was contaminated by inject from the Controller. The Sample Receipt and Processing Unit Health Physicist should have then recognized that the inside of the outer bag, that had been previously removed, was potentially contaminated. The decision was made to place the sample back into a second bag. The original potentially contaminated outer bag was used and the top of the bag inverted as is common practice when placing a contaminated item into a bag. However in this case the inverted interior surface was a bag that was potentially contaminated. Before the Health Physicist had an opportunity to recognize this situation and self correct, the Controller called a 'Time Out' and explained the potential loss of contamination control. The Health Physicist then used a new clean second bag to contain the water sample.

POSSIBLE CAUSE: The health physicist failed to recognize the possibility that the inside of the outer bag was potentially contaminated.

REFERENCE: NUREG I.8; J.11

EFFECT: The loss of contamination control while re-bagging the water sample.

CORRECTIVE ACTION DEMONSTRATED: The Health Physicist replaced the contaminated bag with a new clean second bag to contain the water sample.

c. DEFICIENCY: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES RESOLVED: None

f. PRIOR ISSUES UNRESOLVED: None

3.3.2 Risk Jurisdictions

3.3.2.1 City of Dana Point – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.e.1, 3.d.1, 3.f.1, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None
e. PRIOR ISSUES RESOLVED: None
f. PRIOR ISSUES UNRESOLVED: None

3.3.2.2 City of San Clemente – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.e.1, 3.d.1, 3.f.1, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None
e. PRIOR ISSUES RESOLVED: None
f. PRIOR ISSUES UNRESOLVED: None

3.3.2.3 City of San Juan Capistrano – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.e.1, 3.d.1, 3.f.1, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None
e. PRIOR ISSUES RESOLVED: None
f. PRIOR ISSUES UNRESOLVED: None

3.3.2.4 Orange County – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.a.1, 2.c.1, 2.d.1, 2.e.1, 3.a.1, 3.c.1, 3.c.2, 3.d.1, 3.e.1, 3.e.2, 3.f.1, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None
e. PRIOR ISSUES RESOLVED: None
f. PRIOR ISSUES UNRESOLVED: None

3.3.2.5 Riverside County – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.a.1, 2.d.1, 3.e.1, 3.e.2, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None
e. PRIOR ISSUES RESOLVED: None
f. PRIOR ISSUES UNRESOLVED: None

3.3.2.6 San Diego County – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.a.1, 2.d.1, 2.e.1, 3.a.1, 3.e.1, 3.e.2, 3.f.1, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None
e. PRIOR ISSUES RESOLVED: None
f. PRIOR ISSUES UNRESOLVED: None

3.3.2.7 San Bernardino County – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.a.1, 2.d.1, 3.e.1, 3.e.2, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None
e. PRIOR ISSUES RESOLVED: None
f. PRIOR ISSUES UNRESOLVED: None

3.3.2.8 Los Angeles County – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 2.a.1, 2.d.1, 3.e.1, 3.e.2, 5.b.1.
b. AREA REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. NOT DEMONSTRATED: None

e. PRIOR ISSUES RESOLVED: None

f. PRIOR ISSUES UNRESOLVED: None

3.3.2.9 Capistrano Unified School District – Recovery

In summary, the status of the DHS/FEMA criteria for this location is as follows:

a. MET: 2.c.1, 3.c.2.

b. AREA REQUIRING CORRECTIVE ACTION: None

c. DEFICIENCY: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES RESOLVED: None

f. PRIOR ISSUES UNRESOLVED: None

SECTION 4. CONCLUSION

FEMA Region IX evaluated the Ingestion Pathway Exercise on April 14, 2011, May 18, 2011, and December 14, 2011, in the IPZ around SONGS. The purpose of the exercise was to assess the level of state and local emergency preparedness in response to a simulated radiological emergency. This exercise was held in accordance with FEMA policies and guidance concerning the exercise of state and local RERP and procedures.

The findings presented in this AAR are based on the evaluations of the federal evaluation team, with final determinations made by the FEMA Region IX Regional Assistance Committee Chairperson and approved by the Regional Administrator.

No Deficiencies and four ARCAs were identified during the course of this exercise. Three ARCAs were corrected during the exercise. The 2011 SONGS Ingestion Pathway Exercise Improvement Plan, Appendix A, contains the recommended corrective action plan for the remaining ARCA.

Based on the evaluation of the April 14, 2011, May 18, 2011, and December 14, 2011, Ingestion Pathway Exercise, the offsite radiological emergency response plans for the state of California and the affected local jurisdictions site-specific to SONGS can be implemented, and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at SONGS.

APPENDIX A : IMPROVEMENT PLAN

Issue Number: 51-11-3a1-A-3	**Criterion: 3a1**
ISSUE: A field team member was issued a TLD by the RAP team and no documentation was completed.	
RECOMMENDATION: The team member should complete the proper forms when issued a TLD.	
CORRECTIVE ACTION DESCRIPTION:	
PRIMARY RESPONSIBLE AGENCY:	START DATE:
AGENCY POC:	COMPLETION DATE:

APPENDIX B : EXERCISE EVALUATORS

Location	Evaluator	Agency
State of California	Henry Christiansen Katherine Nishihara Daryl Thome	ICF FEMA Region IX ICF
State of California CDPH Drinking Water and Radiation Laboratory	Katherine Nishihara Daryl Thome	FEMA Region IX ICF
State Dose Assessment Center	Johanna Berkey Richard Echavarria Joseph Keller Alberto Sifuentes Paul Ward Daryl Thome David Stuenkel	FEMA Region X FEMA Region IX ICF FEMA Region IX FEMA HQ ICF ICF
State Field Sampling Team A	Michael Howe	FEMA HQ
State Field Sampling Team B	Bart Ray	ICF
CDPH Sampling Receipt and Processing Unit	Dennis Wilford Katherine Nishihara	ICF FEMA Region IX
City of Dana Point	Henry Christiansen Willis Larrabee	ICF ICF
City of San Clemente	Gary Bolender Henry Christiansen	ICF ICF
City of San Juan Capistrano	Robert Gantt Henry Christiansen	ICF ICF
Orange County	Joseph Keller Melissa Savilonis Henry Christiansen	ICF FEMA RI ICF
Riverside County	Brad McRee Pat Tenorio	ICF FEMA HQ
San Diego County	Richard Grundstrom Pat Tenorio	ICF FEMA HQ
San Bernardino County	Elsa Lopez Pat Tenorio	FEMA Region VI FEMA HQ
Los Angeles County	Roy Smith Pat Tenorio	ICF FEMA HQ
Capistrano Unified School District	Gary Bolender	ICF

FEMA Region IX Senior Site-Specialist, Richard Echavarria

APPENDIX C : ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Meaning
AAR	After Action Report
ARCA	Area Requiring Corrective Action
CDPH	California Department of Public Health
DHS	Department of Homeland Security
FEMA	Federal Emergency Management Agency
IPZ	Emergency Planning Zone
KI	Potassium Iodide
ORO	Offsite Response Organization
RAP	Radiological Assistance Program
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
SDAC	State Dose Assessment Center
SONGS	San Onofre Nuclear Generating Station
TLD	Thermoluminescent Dosimeter

APPENDIX D : EXTENT-OF-PLAY

Presented in this appendix is a compilation of exercise scenario materials submitted by the state of California and SONGS. This appendix contains the extent-of-play agreement prepared by the state of California and approved by FEMA Region IX to provide evaluators with guidance on expected actual demonstration of the evaluation area criteria.

State of California

Extent of Play
For The
San Onofre Generating Station Ingestion Pathway and Recovery Exercise
Laboratory Exercise Segment
May 18, 2011

Prepared By:
California Department of Public Health
In Cooperation With
California Emergency Management Agency

April 22, 2011

STATE OF CALIFORNIA

Extent of Play
For The
San Onofre Generating Station Ingestion Pathway and Recovery Exercise
Laboratory Exercise Segment
May 18, 2011

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STATE OF CALIFORNIA

Extent of Play
For The
San Onofre Generating Station Ingestion Pathway and Recovery Exercise
Laboratory Exercise Segment
May 18, 2011

I. PURPOSE AND SCOPE

The purpose of the Extent of Play agreement is to identify any potential deviations from the implementation of the State of California Nuclear Power Plant Emergency Response Plan. The State will only exercise elements of the plan related to FEMA evaluation criteria 4.c Laboratory Operations limited to the CDPH DWLRB as described in this document.

This proposal addresses the State of California's participation in a segment of the San Onofre Generating Station exercise, parts of which were conducted in April 2011.

II. AUTHORITIES AND REFERENCES

The state agencies have agreed to participate in this exercise segment in order to comply with the requirements of Title 44 Code of Federal Regulation 350 and the guidelines of NUREG 0654 / FEMA-REP-1. Exercise planners utilized the elements described in the Interim Radiological Emergency Preparedness (REP) Program Manual, August 2002, to develop the Extent of Play.

III. DEMONSTRATION, SIMULATION AND INTERVIEWS

Representatives of the Federal Emergency Management Agency (FEMA) will evaluate the California Department of Public Health, the state agency participating in the exercise. The elements to be demonstrated are based on a six-year exercise schedule developed collectively by local, state, federal and utility planners. The Extent of Play document also proposes those exercise elements to be discussed during participant-evaluator interviews.

During the exercise, if a player performs an evaluated activity unsatisfactorily, the FEMA evaluator will first contact the controller regarding performance that can be re-demonstrated. Both the controller and evaluator will then discuss the matter before informing the player of the situation and allowing them to re demonstrate the activity, if needed.

IV. SEQUENCE OF EVENTS

This is a one-day isolated demonstration of state radiochemistry laboratory capabilities to be conducted at the California Department of Public Health (CDPH), Drinking Water and Radiation Laboratory Branch (DWRLB) located at 850 Marina Bay Parkway, Richmond,

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CA 94804. This laboratory is where some of the samples collected during a Nuclear Power Plant emergency event would be delivered for sample processing and analysis. The exercise will occur in May 18, 2011 at approximately 9:30 am and conclude on or before 5 pm on the same day.

This exercise is an isolated segment of the San Onofre Generating Station exercise. State of California plans and procedures are such that samples for laboratory analysis would be shipped from the State Dose Assessment Center (SDAC), which is integrated with the Federal Radiological Monitoring and Assessment Center (FRMAC). Samples would be shipped via commercial carrier or delivered via State Vehicles. DWRLB is the State Laboratory, which would be analyzing samples from a Nuclear Power Plant incident in California. In addition, California relies on FRMAC capabilities to provide for laboratory analysis.

Most samples sent to DWRLB from a Nuclear Power Plant incident would be low-level samples analyzed to verify that the areas sampled had not been impacted or to verify the isotopic mix at various sampling points. The samples used in this exercise fall into this range of samples and will be near background level in radionuclide content. This exercise segment is aimed at demonstrating operating procedures with a small shipment of samples and is not intended to demonstrate workload or staffing levels during an actual event.

This exercise reflects how samples would be received, processed and analyzed during an emergency event, but it does not attempt to simulate communication, sample management activities or exchange of other information that would normally occur between SDAC and any laboratory where samples are being sent. The exercise is limited to typical fission product analytes from a reactor. The exercise is not intended to cover terrorism events or to deal with complex mixtures of radionuclide and other types of contaminants that might result from a terrorism event. CDPH will provide two controllers for this exercise segment.

- Controllers should arrive at approximately 8:30 am. FEMA evaluators should arrive at 9:00 am. The laboratory facility is the California Department of Public Health, Drinking Water and Radiation Laboratory Branch located at 850 Marina Bay Parkway in Richmond, California. Upon entering the driveway entrance leading into the facility visitors will stop at a guard station and indicate that they are visiting the DWLRB. The contact person at the laboratory is Shiyamalie Ruberu, Ph.D, who may be reached at (510) 620-2930. The guard will direct visitors to the appropriate parking area and visitors will sign in and receive a visitor's badge upon entering the main or public entrance to the facility.

- The laboratory exercise will begin at approximately 9:30 am with approximately one half hour for introduction of players, controllers and evaluators and for basic introductory remarks for the exercise.

- At approximately 10 am a small shipment of samples containing two soil samples and

one water sample will be delivered to the receiving area at the CDPH DWRLB by a person simulating typical sample delivery from the State Dose Assessment Center. These samples will be received and processed as they would for an emergency event at a nuclear power plant.

- The water sample is meant to represent a drinking water or surface water sample being analyzed for radionuclides (gross alpha, gross beta, and gamma spec). The laboratory is certified for drinking water analysis of radionuclides, but there is not any requirement for such certification in California procedures or FEMA requirements.
- Vegetation samples would likely be collected with soil samples, whenever vegetation is present, however, if vegetation sample analysis were needed we would first request that FRMAC arrange for or perform analysis of the samples. If possible, we would not send vegetation samples to our laboratory, partially to avoid sample cross contamination or contamination of the laboratory. For NPP events in CA we anticipate using the presence or absence of radionuclide deposition in soil (determined by in-situ gamma spectroscopy or gamma spectroscopy of soil samples) as an adequate measure for making most necessary decisions. The Richmond Laboratory does analyze some routine environmental vegetation samples after drying and ashing them for counting in a reproducible geometry. This process takes several days and the number of samples processed is limited by the drying and ashing capabilities. The laboratory does not have a calibrated geometry for analysis of bulk vegetation samples.

- The exercise play will continue as needed with at least a half-hour break for lunch somewhere between 12 and 1 pm with the exact time being decided by the controller(s) at the time of the exercise. We allowed all day for the drill because we were unsure how detailed the FEMA interview process might be and wanted to allow sufficient access for FEMA evaluators. Also, we wished to allow time for re-demonstration if needed. It is likely that the drill will take less time.
- The employees of the Drinking Water and Radiation Laboratory Branch who are players in the exercise will be available to FEMA evaluators for interviews as needed per the detailed Extent of Play items provided later in this document.
- The exercise will terminate when the controller(s) and FEMA's lead evaluator have concurred that the objectives have been met.
- Participants will hold a debriefing on the day's activities.

V. EXTENT OF PLAY

This exercise segment is limited to FEMA Evaluation Area sub-element 4 Field Measurement and Analysis and covers only sub-element 4.c.1, Laboratory Operations. Sub-element Section 4.c.divided into separate segments specified below in italics. Under each of these segments the Extent of Play relating to the segment above it is specified.

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The laboratory is capable of performing required radiological analyses to support protective action decisions. This sub element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to perform laboratory analyses of radioactivity in air, liquid and environmental samples to support protective action decision-making.

Extent of Play for Exercise as related to the above evaluation area:

Laboratory staff will use CDPH Drinking Water and Radiation Laboratory Branch (DWRLB) Standard Operating Procedure for Nuclear Power Plant Emergency Response, which is DWRLB's procedure for receiving, processing and analyzing samples for radionuclides, where the samples are related to an emergency event at a nuclear power plant. This exercise reflects how samples would be received, processed and analyzed during an emergency event, but it does not attempt to simulate communication and analysis prioritization activities or exchange of other information that would normally occur between SDAC and any laboratory where samples are being sent.

Laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, preventing buildup of background radiation due to stored samples, preventing cross contamination of samples, preserving samples that may spoil and keeping track of sample identity. In addition, the laboratory staff should demonstrate the capability to prepare samples for conducting measurements.

Extent of Play for Exercise as related to the above evaluation area:

DWRLB's SOP will be used with simulated samples from an emergency event for the limited number of samples provided for the exercise (2 soil samples and 1 water sample). Sections 10.4, 10.5 and Section 11 of the DWLRB SOP will be demonstrated by interview only.

The laboratory should be properly equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory instruments calibrations should be traceable standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures.

Extent of Play for Exercise as related to the above evaluation area:

The laboratory facilities will be available to the evaluators. Laboratory staff members participating in the exercise will be available for interview. The SOP used for processing and analysis of samples from a nuclear power plant emergency event will be used for the exercise.

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New or revised methods may be used to analyze atypical radionuclide releases (for example, transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

Extent of Play for Exercise as related to the above evaluation area:

This exercise is limited to typical fission product analytes from a reactor. The exercise is not intended to cover terrorism events or to deal with complex mixtures of radionuclide and other types of contaminants that might result from a terrorism event. The State of California relies on the Federal Radiological Monitoring and Assessment Center (FRMAC) and associated assets to provide the bulk of radiochemistry capabilities in a reactor accident event. The samples sent to the Drinking Water and Radiation Laboratory Branch (DWRLB) would be primarily soil and water samples that are near background level. The sample media for this exercise will be limited to soil and water samples.

The laboratory staff should be qualified in radioanalytical techniques and contamination control procedures.

Extent of Play for Exercise as related to the above evaluation area:

Laboratory staff will be available for interview regarding training and experience. DWRLB staff members will be participating.

OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (for example, compacts, utility, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise. All activities must be based on the OROs plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the Extent of Play agreement.

Extent of Play for Exercise as related to the above evaluation area:

The players in this exercise are limited to State of California DWRLB staff with the exception of person(s) delivering samples. State of California emergency response procedures for a nuclear power plant accident specify integration of State and Federal resources at SDAC, which is where sample distribution and analysis prioritization would occur. The DWRLB would typically receive low level or near background level samples used primarily to verify that sample media such as soil and water have not been contaminated or to verify the mix or radionuclides present at various sampling locations chosen by the SDAC. This exercise partially simulates that situation with a single sample delivery consisting of two soil samples and one water sample packaged as they

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might arrive during an emergency incident.

VI. ATTACHMENTS

Attachment A, **ACRONYMS**

ANI:	American Nuclear Insurers
CalEMA:	California Emergency Management Agency
CalTrans:	California Department of Transportation
CDFA:	California Department of Food and Agriculture
CDFG:	California Department of Fish and Game
CCDPH:	California Department of Public Health
CDPR:	California Department of Parks and Recreation
CDSS:	California Department of Social Services
CFR:	Code of Federal Regulations
CHP:	California Highway Patrol
CNG:	California National Guard
CSWC:	California State Warning Center
DOE:	US Department of Energy
DPW:	Department of Public Works
EMSA:	Emergency Medical Services Authority
EOC:	Emergency Operations Center
EOF:	Emergency Operations Facility
EOP:	Extent of Play
EPA:	US Environmental Management Agency
EWEC:	Emergency Worker Exposure Control
FDA:	US Food and Drug Administration
FEMA:	Federal Emergency Management Agency
FRERP	Federal Radiological Emergency Response Plan
FRMAC:	Federal Radiological Monitoring and Assessment Center
GIS:	Geographical Information System
CDC:	Center for Disease Control
IPZ	Ingestion Pathway Zone
JEOC:	Joint Emergency Operations Center
JMC:	Joint Media Center
KI:	Potassium Iodide
LFA:	Lead Federal Agency
NPP:	Nuclear Power Preparedness
NRC:	Nuclear Regulatory Commission
NUREG:	Nuclear Regulation
ORO:	Offsite Response Organization
PAD:	Protective Action Decision
PAG:	Protective Action Guide
PAI:	Protective Action Implementation
PAR:	Protection Action Recommendation
PIO:	Public Information Officer
RAP:	Radiological Assistance Program
REOC:	Regional Emergency Operations Center
REP:	Radiological Emergency Preparedness
SB:	Santa Barbara
SDAC:	State Dose Assessment Center
SLO:	San Luis Obispo
SOC:	State Operations Center
SONGS:	San Onofre Generating Station

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UDAC:	Unified Dose Assessment Center
USDA:	US Department of Agriculture

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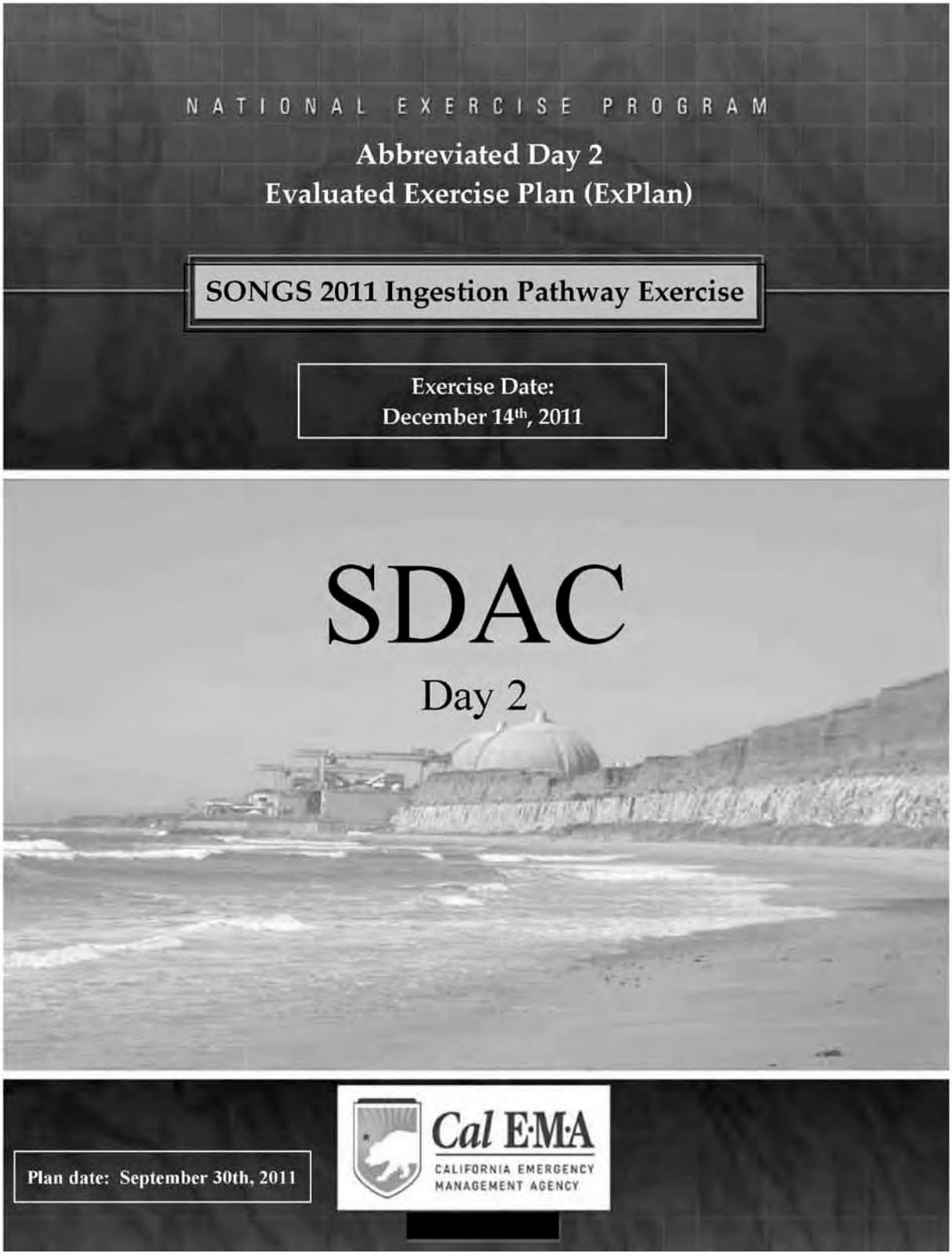
NATIONAL EXERCISE PROGRAM
Abbreviated Day 2
Evaluated Exercise Plan (ExPlan)
SONGS 2011 Ingestion Pathway Exercise
Exercise Date:
December 14th, 2011
SDAC
Day 2
Plan date: September 30th, 2011
Cal EMA
CALIFORNIA EMERGENCY MANAGEMENT AGENCY

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PREFACE

The SONGS 2011 Evaluated Ingestion Pathway Exercise was originally scheduled for April of 2011. Due to the State's response to the Fukushima Dia-ichi nuclear plant event caused by the 2011 Great East Japan Earthquake and Tsunami, the second day of the exercise was postponed to December 2011. This abbreviated Exercise Plan (ExPlan) was produced to address minor changes to the original SONGS 2011 Evaluated Ingestion Pathway Exercise Plan which followed the guidance set forth in the Federal Emergency Management Agency (FEMA) Radiological Emergency Preparedness Planning manual and the FEMA Homeland Security Exercise and Evaluation Program (HSEEP).

This abbreviated ExPlan is for our second day of evaluation or Day 2 activities and gives officials, observers, and players from participating organizations the information necessary to observe or participate in an exercise related to a nuclear power plant ingestion pathway emergency focusing on participants' emergency response plans, policies, and procedures. The information in this document is current as of the date of publication and is subject to change as dictated by the planning team.

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HANDLING INSTRUCTIONS

1. The title of this document is *2011 SONGS IPX Day 2 Exercise Plan (ExPlan)*.
2. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, will be stored in a locked container or area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.
3. For more information, please consult the following points of contact (POCs):

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CONTENTS

CHAPTER 1: GENERAL INFORMATION

Introduction

The SONGS 2011 IPX Day 2 Exercise is designed to demonstrate emergency response plans, policies, and procedures that pertain to a nuclear power plant emergency that is significant enough to warrant the activation of the State Dose Assessment Center and related facilities. Such an exercise is a complex event that requires detailed planning.

This Exercise Plan (ExPlan) was originally produced by the SONGS 2011 Evaluated Ingestion Pathway Exercise planning team, at the direction of the California Emergency Management Agency (Cal EMA). The ExPlan describes the anticipated exercise demonstrations and level of participation for the agencies listed in Appendix C, including participating departments within those agencies.

This exercise is a one-day exercise on December 14, 2011, and will be referenced as Day 2 of the Ingestion Pathway Exercise.

Confidentiality

The control of information for this exercise is based more on details of the scenario than agency procedures. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials deemed necessary to their performance.

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and protect this material.

Public release of exercise materials to third parties is at the discretion of the California Emergency Management Agency.

Purpose

The purpose of this exercise is to evaluate player actions against current response plans and capabilities for a nuclear power plant-related incident, and to comply with the requirements of 44 CFR 350 and the guidelines of NUREG 0654/FEMA-REP-1. Exercise planners utilized the elements described in the 67 FR 20580 (April 25, 2002) and Interim Radiological Emergency Preparedness (REP) Program Manual (August 2002) to develop this exercise.

This document presents the evaluation areas that will be demonstrated, and identifies planned deviations from the implementation of the applicable plans. State and local agencies will implement applicable elements in their plans and procedures unless otherwise specified. Copies of applicable plans and procedures have been provided to DHS Preparedness Directorate, Office of Infrastructure Protection, Chemical and Nuclear Preparedness and Protection Division staff. The plans and procedures below, with the noted revision dates, are references for this exercise:

- California Nuclear Power Plant Emergency Response Plan (State NPP Plan) (2008)
- California State Dose Assessment Center Operational Plan, (SDAC Plan, Draft) (2011)
- California Department of Public Health, Section 9 of the State NPP Plan (2008)

Target Capabilities

Capabilities-based planning takes an all-hazards approach to planning and preparation which builds capabilities that can be applied to a wide variety of incidents. Target Capabilities for this exercise are listed below:

Mission Areas	Target Capabilities
Common Capabilities	Communications
Protect Mission Capabilities	Food and Agriculture Safety and Defense
Respond Mission Capabilities	On-Site Incident Management
	Critical Resource Logistics and Distribution
	Responder Safety and Health
	Emergency Public Safety and Security
	Environmental Health
	WMD and Hazardous Materials Response and Decontamination
	Emergency Public Information and Warning

Exercise Objectives

The objective of the State, local jurisdiction, agencies, organizations, and SONGS is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

Emergency Preparedness Evaluation Areas – the elements and sub-elements – for this exercise are those that are required to be demonstrated in every ingestion pathway exercise, as required by the *Interim REP Program Manual (August 2002)*.[1]

Appendix F shows the emergency preparedness elements that are required to be demonstrated in the SONGS 2011 IPX Day 2 Evaluated Exercise, along with the level of demonstration that will be displayed in the exercise (i.e., fully demonstrated, limited demonstration, simulated, out-of-sequence interviews, not demonstrated, and participant). Appendix C includes all organizations that will participate in the exercise, with specific conditions listed by agency in Appendix G.

[1] See Table 4 – Federal Evaluation Process Matrix for minimum frequency of specific evaluation areas and sub-elements. See also 67 FR 20602, Table 2 (April 25, 2002).

CHAPTER 2: EXERCISE LOGISTICS

Exercise Summary

General

The SONGS 2011 IPX Day 2 Evaluated Exercise is designed to demonstrate emergency response plans, policies and procedures as they pertain to a nuclear power plant-related incident. The SONGS 2011 IPX Day 2 Evaluated Exercise Field Activities/SDAC will begin at approximately nine o'clock am on December 14th, 2011. Exercise play will continue until the Lead Evaluator and Lead Controller determine that the exercise objectives have been met.

Assumptions

Assumptions constitute the implied factual foundation for the exercise and, hence, are assumed to be present before the start of the exercise. The following general assumptions apply to the SONGS 2011 IPX Day 2 Evaluated Exercise:

- The exercise will be conducted in a no-fault learning environment wherein response plans, policies and protocols - not individuals - will be evaluated.
- Exercise simulation will be realistic and plausible, containing sufficient detail from which to respond.
- Exercise players will react to the information and situations as they are presented, in the same manner as if this had been a real event.

Constructs and Constraints

Constructs are exercise devices designed to enhance or improve exercise realism. Alternatively, constraints are exercise limitations that may detract from exercise realism. The SONGS 2011 Evaluated Ingestion Pathway Exercise planning team recognizes and accepts the following as necessary:

- Limited FRMAC participation will affect some criteria demonstration. These modification and limitations will be listed in Appendix G
- Part of the exercise will be conducted using two "time jumps" or time points to demonstrate specific criteria. T= the time that the release ended and +2 or +7 represents two days or seven days.
    - The exercise will begin two days after the release from the power plant has been stopped. This point will be referred to as "T+2"

  - The other time jump will be seven days after the release has been stopped. This point will be referred to as "T+7"
  - For this exercise: we will use T+2 as the time point in the morning and T+7 as the time point in the afternoon.
- Exercise demonstrations for field activities conducted at Los Alamitos will not utilize a time jump and will be independent of any other exercise play. Data from the field teams or laboratory will not be utilized by any other demonstration in the exercise.
- Exercise communication and coordination will be limited to the participating exercise venues.
- The participating agencies may need to balance exercise play with real-world emergencies. It is understood that real-world emergencies will take priority.
- No media activities will be demonstrated or simulated.
- Ingestion of Potassium Iodide (KI) will not occur during this exercise.
- Some criteria will be met by interview or limited demonstration. See Appendix G for additional details.

Exercise Evaluation

Areas Requiring Corrective Action (ARCAs) may be immediately corrected and re-evaluated during the exercise or immediately following, providing that the re-demonstration is not disruptive, does not interrupt the flow of the exercise, and does not affect other evaluation areas.

If a participant performs an evaluated criterion unsatisfactorily during the exercise, the Evaluator, after consultation with the Controller, will provide another opportunity for the participant to re-demonstrate the activity. Appropriate training may be given to the participant by controllers or other players prior to the re-demonstration. If the activity is re-demonstrated satisfactorily, the issue will be documented in the exercise report as corrected during the exercise. If the activity is not re-demonstrated successfully, disposition of the issue will be discussed by FEMA and Cal EMA during the After Action Conference.

Evaluation areas that are not demonstrated due to scenario play may be satisfied through interview before, during, or immediately following the exercise, or at a date and time agreed on by Evaluator and Interviewee. The Evaluator may interview players to determine sequence of events or actions that would have been taken if the scenario

had been different. Evaluator interview of players should not be disruptive nor interrupt flow of the exercise. Two out-of-sequence interviews have been scheduled as of the writing of the ExPlan. If interviews are planned due to findings during the dress rehearsal or through discovery, the schedule for the interviews will be located in Appendix A.

FEMA has agreed to modify the HSEEP evaluation process, especially in regards to designation of Areas Requiring Corrective Action (ARCAs). If player performance during the exercise is such that would normally result in identification of an ARCA, the issue will instead be deferred to the After Action Conference, where it will be discussed between FEMA and the State of California.

FEMA will create the After Action Report for this exercise, which will take the place of the Standard Exercise Report Format (SERF) Report normally issued by FEMA as the written evaluation of a REP exercise. The After Action Report will include an Improvement Plan developed by participants to address issues documented by FEMA.

Exercise Participants

The following are the categories of participants involved in this exercise; note that the term "participant" refers to all categories listed below, not just those playing in the exercise:

- *Players.* Players are agency personnel who have an active role in responding to the simulated emergency.
- *Controllers.* Controllers set up and operate the exercise site, plan and manage exercise play and direct the pace of exercise play. Controllers also work to control the flow of the exercise and explain or clarify issues arising during the exercise. Any changes that impact the scenario or affect other areas of play must be coordinated through the Controller at that facility.
- *Evaluators.* FEMA Evaluators provide an independent evaluation, with written narratives and feedback, on a designated functional area of the exercise. They are assigned based on their experience and expertise in the functional area(s) they assess during the exercise. Evaluators assess and document participants' performance against the State, local emergency plans and procedures, and REP program exercise evaluation criteria, in accordance with REP Program regulations and guidance.
- *Observers.* Observers visit or view selected segments of the exercise. Observers do not play in the exercise, and do not perform any control or evaluation functions.

- *Support Staff.* Exercise support staff includes individuals who are assigned administrative and logistical support tasks during the exercise.

Exercise Tools

Master Scenario Events List (MSEL) and Data

The Master Scenario Events List outlines benchmarks, as well as injects that drive exercise play. It also details realistic input to the exercise players as well as information expected to emanate from simulated organizations. This exercise will use only data to drive play and will be provided at the beginning of the exercise to participants.

Exercise Implementation and Rules

- The decision to conclude the exercise will be made by the Lead Evaluator and the Lead Controller for both participating facilities based upon the completion of operations and attainment of the exercise objectives. A message indicating that the exercise has been completed will be issued at the direction of the Lead Controller.
- Real-world emergency actions take priority over exercise actions.
- Unless otherwise directed by control staff, exercise participants will comply with their established response procedures, except as noted in Appendix G.
- All communications (written, radio, telephone, etc.) made during the exercise will begin and end with the phrase, "**This is an exercise**" or "**This is a drill.**"
- "**Real Emergency**" will be the designated phrase that indicates there is an emergency requiring immediate attention that may or may not stop exercise play.
- "**Timeout**" will be the designated phrase used by controllers to temporarily stop exercise play.

Safety Requirements

General

Both sites will have a Safety Officer for this exercise. However, all exercise participants including players, controllers, evaluators, and support staff will assist the Officers for the exercise.

Any participant witnessing an unsafe act or emergency should immediately notify a controller. The controller(s) may suspend exercise play and notify the Evaluator and Controller, who will evaluate the situation and determine the proper course of action.

Site Access

Security

Each site will control entry to their exercise facilities. Players should advise a controller or evaluator if an unauthorized person is present.

Observer Coordination

Observers, if allowed, will not be permitted to interfere with exercise demonstrations. Observers allowed will be escorted by an agency representative and/or the Observer Controller. The Observer Controller will be present to explain the exercise program and answer questions for the observers during the exercise.

Refreshments and Restroom Facilities

Food and refreshments will be made available for the convenience of all exercise participants. Restroom facilities will be located onsite for use during the exercise.

Communications Plan

Exercise Start, Suspension, and Termination Instructions

The SONGS 2011 IPX Evaluated Exercise will begin December 14th, 2011 at approximately nine o'clock am for Ingestion Pathway Field Activities and SDAC. Exercise play will continue until the Lead Evaluator and Lead Controller determine that the exercise objectives have been met.

If an actual emergency occurs, the exercise may be suspended or terminated at the discretion of the Lead Controller, depending on the nature of the incident. The designated emergency phrase in case of a medical emergency is "**Real Emergency**." The Lead Controller will announce restart of the exercise.

All spoken and written communication will start and end with the statement, "THIS IS AN EXERCISE" or "THIS IS A DRILL".

Player Communications

Players will use normal communications methods for responding to exercise play. Player communications must only be sent to participating agencies. *In no instance will exercise communication interfere with real-world communications.*

Controller Communications

The principal method of communications for controllers during the exercise will be telephone. Controller communications will link control personnel and will remain separate from the player communications.

Public Affairs

This exercise enables players to demonstrate a reasonable assurance that the public can be protected during a nuclear power plant-related emergency. Any public safety exercise may be a newsworthy event. Special attention must be given to the needs of the media, allowing them to get as complete and accurate a story as possible while ensuring their activities do not compromise the exercise realism, safety, or objectives.

Media personnel will be directed to contact Cal EMA Office of Public information.

CHAPTER 3: PLAYER GUIDELINES

Exercise Staff

Lead Controller

The Lead Controller has the overall responsibility for planning, coordinating, and overseeing all exercise functions at each participating location. He/she manages the exercise activities and maintains a close dialogue with the Controllers regarding the status of play and the achievement of the exercise design objectives. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller debriefs the controllers after the exercise and oversees the setup and takedown of the exercise.

Controllers

The Controller will coordinate any changes that impact the scenario or affect other areas of play. Controllers provide injects to the players as described in the MSEL. At least one controller will be onsite with each facility and field team participating in the exercise, and at each out-of-sequence interview.

Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the exercise. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the Players in accordance with the Overview of Play. The Lead Evaluator debriefs the Evaluators after the exercise and oversees the entire evaluation and After Action process.

Evaluators

Evaluators work under the direction of the Lead Evaluator, and as a team with controllers. Evaluators are SMEs who record events that take place during the exercise and assess/submit documentation for review and inclusion in the After Action Report (AAR). Evaluators should refrain from any direct interaction with the players during exercise play except with the facilitation of a Controller for clarification of issues or during scheduled interviews.

Player Instructions

Before the Exercise

- Review the appropriate emergency plans, procedures, and exercise support documents.
- All Players will preposition at Los Alamitos for this exercise, unless otherwise noted in this document. Wear appropriate uniform/identification badge.
- If you gain knowledge of the scenario before the exercise, notify a controller so that appropriate actions can be taken to ensure a valid evaluation.
- Please sign in.

During the Exercise

- Respond to the exercise events and information as if the emergency were real, unless otherwise directed by an exercise controller.
- Reference materials are available and may be used during the exercise. Players may also ask other participants for assistance if they have questions about their roles and responsibilities.
- Refrain from engaging in personal conversations with controllers, evaluators, observers, or media personnel while the exercise is in progress. If you are asked an exercise-related question, give a short, concise answer. If you are busy and cannot immediately respond, indicate so, but report back with an answer at the earliest time possible.
- If you do not understand the scope of the exercise or if you are uncertain about an organization's or agency's participation in an exercise, ask a controller.
- Parts of the scenario may seem implausible. Recognize that the exercise has objectives to satisfy and may require the incorporation of unrealistic aspects. Note that every effort has been made by the trusted agents to balance realism with the creation of an effective learning and evaluation environment.
- All exercise communication will begin and end with the phrase "**This is an exercise**" or "**This is a drill**." This is a precaution taken so anyone overhearing the conversation will not mistake the exercise play for a real-world emergency.
- Maintain a log of your activities. Many times, this log may include documentation of activities missed by a controller or evaluator.

Following the Exercise

- At the end of the exercise, please participate in the Hot Wash.
- Complete the Participant Feedback Form. This form allows you to comment candidly on emergency response activities and effectiveness of the exercise. Please provide the completed form to a controller.

- Leave all documentation generated during the exercise at your assigned workstation or other designated location.

Simulation Guidelines

Because the SONGS 2011 IPX Day 2 Evaluated Exercise is of limited duration and scope, the physical description of what is occurring at the incident sites and surrounding areas may be relayed to the players by simulators or controllers. Exercise timeline is compressed so that demonstrations of all criteria can be met.

CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

Exercise Documentation

Evaluators will document the exercise based on the appropriate Exercise Evaluation Guides (EEGs) for actions in their area. The EEGs will be provided separately by FEMA as part of the Evaluator Package. Evaluators should document key activities and those that require a timely response for later evaluation.

Exercise Evaluation Guides

Each evaluator will be provided with an EEG that will provide specific guidance on what data to collect during the exercise, how to record it, and how to analyze it prior to submission to the Lead Evaluator. The evaluation team will compile all evaluator submissions into the first working draft of the AAR.

Each EEG provides a list of subordinate activities and tasks that players are expected to perform during the exercise in order to demonstrate the given capability. These tasks are drawn primarily from REP Program documentation.

Hot Wash

Immediately following the completion of exercise play, the FEMA Evaluator for the location will briefly (10-15 min.) review the performance of the players and his/her observations.

After the FEMA Evaluator has exited the area, the Facility Controller will facilitate a hot wash with players at each location. This meeting is primarily geared toward participants. The hot wash is a **no-fault** opportunity for players to voice their opinions on the exercise and their own performance while the events are still fresh in their minds. The hot wash should not last more than 20 minutes. Controllers should take notes during the hot wash and include these observations in their analysis. Observers will not be permitted to attend without consent of the Lead Controller.

FEMA Exercise Participant Briefing

Controllers, simulators, evaluators, and selected exercise participants will attend the exercise briefing on Thursday, December 15, 2011. During the debriefing these individuals will discuss their observations of the exercise in an open environment to clarify actions taken during the exercise.

After Action Report (AAR)

The AAR is the culmination of the SONGS 2011 Day 2 Evaluated Exercise. It is a written report outlining the strengths and areas for improvement identified during the exercise. The AAR will include the timeline, executive summary, scenario description, mission outcomes, and capability analysis. The AAR will be drafted by FEMA, with input regarding exercise issues provided by the agencies involved.

After Action Conference and Improvement Plan

The improvement process represents the comprehensive, continuing preparedness effort of which the SONGS 2011 IPX Day 2 Evaluated Exercise is a part. The lessons learned and recommendations from the AAR will be incorporated into an Improvement Plan (IP).

After Action Conference

The After Action Conference is a forum for exercise planners and officials to hear the results of the evaluation analysis, validate the findings and recommendations in the draft AAR, and begin development of the IP. The After Action Conference will be held at a later date in 2012 at a location to be determined. All participant agencies, jurisdictions, and the Utility are involved in this process.

Improvement Plan (IP)

The IP identifies how recommendations will be addressed, including what actions will be taken, who is responsible, and the timeline for completion; it is created by the Cal EMA during the After Action Conference.

APPENDIX A: EXERCISE/INTERVIEW SCHEDULE

Table A.1 *SONGS 2011 IPX Day 2 Evaluated Exercise Interview Schedule*

Agency	Location	Date	Time	Contact	Comments
CDFA, CDPH, Counties*	4671 Liberty Ave. JTB Los Alamitos	12/14/11	@1000		Agricultural Hold Interview
Orange County**	4671 Liberty Ave. JTB Los Alamitos	12/14/11	TBD		Reentry procedures

*At the time of writing this plan, County representatives may interview the Food Control issues at a later date, but no later than 90 days from 12/14/11.
** At the time of writing this plan, Orange County may interview Reentry procedures at a later date, but no later than 90 days from 12/14/11.

Table A.2 *SONGS 2011 IPX Day 2 Evaluated Exercise Schedule*

Time	Activity	Location
	Tuesday, December 13, 2011	
1400	IPX Controller /Evaluator in-briefing	SROC Joint Forces Training Base,
		4671 Liberty Ave, Los Alamitos, CA
1530	Federal agency SDAC meeting	
	Wednesday, December 14, 2011	
0830	Exercise sign in	Joint Forces Training Base, Bldg 57
0900	SDAC	11200 Lexington Dr., Los Alamitos, CA
0900	Field activities	Joint Forces Training Base, MOUT Field Area
		Los Alamitos, CA
	Thursday, December 15, 2011	
1400	FEMA Out-briefing	SREOC Joint Forces Training Base,
		4671 Liberty Ave., Los Alamitos, CA
	Future Meetings and Events	
Date TBD	After Action Conference	TBD

APPENDIX B: RESERVED

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APPENDIX C: PARTICIPATING AGENCIES

Table C.1 *Participating Agencies*

Participating Agencies
Federal
Federal Emergency Management Agency
Nuclear Regulatory Commission
Department of Energy
Federal Advisory Team (several agencies)
State
California Emergency Management Agency
California Department of Public Health Division of Drinking Water and Environmental Management, Nuclear Emergency Response Program Division of Food, Drug and Radiation Safety, Radiological Health Branch
California Department of Fish and Game
California Department of Food & Agriculture
California Highway Patrol
County and Cities
County of Orange
County of San Diego
County of Los Angeles
County of San Bernardino
County of Riverside
Other Public Agencies
Private Sector Organizations
Southern California Edison

APPENDIX D: ACRONYMS

AAR	After Action Report
ARCA	Area Requiring Corrective Action
Cal EMA	California Emergency Management Agency
Caltrans	California Department of Transportation
CDFA	California Department of Food and Agriculture
CDPH	California Department of Public Health
CDSS	California Department of Social Services
CFR	Code of Federal Regulations
CHP	California Highway Patrol
CNG	California National Guard
CSWC	California State Warning Center
CUSD	Capistrano Unified School District
DHS	US Department of Homeland Security
EAS	Emergency Alert System
EEG	Exercise Evaluation Guide
EOC	Emergency Operations Center
EWEC	Emergency Worker Exposure Control
ExPlan	Exercise Plan
FEMA	Federal Emergency Management Agency
FOUO	For Official Use Only
FR	Federal Register
FRMAC	Federal Radiological Measurement Analysis Center
HSEEP	Homeland Security Exercise and Evaluation Program
IP	Improvement Plan
IPC	Interjurisdictional Planning Committee
IPX	Ingestion Pathway Exercise
IPZ	Ingestion Pathway Zone
JIC	Joint Information Center
KI	Potassium Iodide
MSEL	Master Scenario Events List
NPP	Nuclear Power Plant / Nuclear Power Preparedness
NPS	National Planning Scenarios
NRC	US Nuclear Regulatory Commission
ODAC	Offsite Dose Assessment Center
PAD	Protective Action Decision
PAG	Protective Action Guidelines

PAR ..... Protective Action Recommendation
PIO ..... Public Information Officer
REOC/SREOC ..... Southern Region Emergency Operation Center
SDAC ..... State Dose Assessment Center
SEP ..... State Emergency Plan
SME ..... Subject Matter Expert
SOC ..... State Operations Center
SONGS ..... San Onofre Nuclear Generation Station
State NPP Plan ..... State of California Nuclear Power Plant Emergency Response Plan
TBD ..... To Be Determined
TCL ..... Target Capabilities List
UTL ..... Universal Task List

APPENDIX E: OUTSTANDING ISSUES

Note: No outstanding ARCAs or Deficiencies noted for correction from prior SONGS IPX. One Planning Issue from the 2004 Operation Synergy Exercise remains unaddressed.

PLANNING ISSUE:

Field Sampling Team Procedures
Criteria: 4.b.1
Condition: In several instances during sampling for water, soil, and foodstuffs, the team members deviated from prescribed procedures. In no case was the integrity of the samples threatened; however procedures should be followed for consistency among teams. Examples noted during field activities for Team 5 were as follows:

a. Sampling tools and equipment were not washed with clean water following use. Instead they were carefully monitored by use of a sensitive beta-gamma survey meter. (Also, they were not reused during this exercise.)
b. Sampling tools and equipment were carried to the sampling sites from the vehicle without being placed into plastic bags, as the procedures specify. Instead they were carried by other ream members.
c. Sampling tools and equipment were not placed on plastic sheets awaiting use at the sample sites. Instead they were held by team members until the team leader was ready to use them.
d. A one-inch gap was not maintained between the water and the cubitainer cap. The reason for this requirement was not explained in the procedures and may have been considered unnecessary.
e. Sample control forms were not placed into separate plastic bags and then placed between the sample bag and an outer plastic bag. Instead, the forms were kept in the direct possession of team members and turned in to Sample Receipt along with the samples. One reason for this was that the chain-of-custody signature box is an integral part of the Sample Control form; therefore, the security seal on the outer plastic bag would have to be broken each time custody of the sample(s) changed.
f. A sample collection container (specifically, a bucket) specified in the procedures was not present in the sampling kit; therefore, the team member used a clean soil sample bottle to dip the water into the cubitainer.

Reference: NUREG-0654, section K.3.a
Effect: If many deviations from prescribed procedures are tolerated, the end results may be unacceptable.
Recommendation: Review procedures pertaining to field monitoring and sampling using input from personnel who actually are tasked to do the work. Revise procedures to include more efficient and better means to accomplish the same end result.

APPENDIX F: OVERVIEW OF PLAY

DAY 2 IPX-SDAC OVERVIEW OF PLAY

Codes for Table:
D.....Element will be fully demonstrated.
I.....Element will be demonstrated by interview.
L.....Element will be demonstrated with limitations that are described in this Exercise Plan.
P.....Organization will participate in the demonstration of the element for the purpose of facilitating demonstration by the State.
C.....Comment.
For a more complete description of the exercise evaluation areas and any limitations, see the narrative in the remainder of this Exercise Plan.

	Mobilization	Facilities	Direction & Control	Communications Equipment	Equipment & Supplies to Support Operations	Emergency Worker Exposure Control	Rad Assmt- PARs- Based on Available Info	Rad Assmt- PADs for the General Public	Prot Action Decisions for Special Populations	Rad Assessment & IA/M For Ingestion Exposure	Rad Assmt & IA/M For Relo/Re-entry/& Return	Implem. of Emergency Worker Exposure Control	Implementation of KI Decision	Implementation of PADs - Special Populations	Implementation of PADs for Schools	Implementation of Traffic and Access Control – Accurate Instructions are Provided	Implementation of Traffic and Access Control	Implementation of Ingestion Pathway Decisions	Impl of IP Dec.: Strat and Instr Materials	Impl of Relo/Re-entry/Return Decisions	Field Measurements and Analysis	Plume Phase Field Measurements and Analysis	Plume Phase Field Measurement Analysis Procedures	Post Plume Phase Field Meas. & Sampling	Laboratory Operations	Activation of the Prompt Alert and Notification	Activation Prompt Alert and Notif - Exception Areas	Emerg Info & Instructions for the Public & Media	Monitoring/DECON/Rsp of Evacuees and EW	Monitoring/DECON of EW Equipment/Vehicles
	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.3	5.b.1	6.a.1	6.b.1
EVALUATED ORGANIZATION	**Emergency Operations Management**					**Protective Action Decision-Making**						**Protective Action Implementation**									**Field Measurement and Analysis**					**Emergency Notif & Public Information**			**Support Op/Fac**	
State Dose Assessment Center			L		L					L	L							L	I									L			
SDAC Field Ops			L	I	I	I				L	L	L												D						DI	
SDAC EW Monitor and DECON																													I.I		
Local Jurisdictions ORO*																			I												
Orange County ORO**																				I											

*County representatives may interview the Food Control issues at a later date, but no later than 90 days from 12/14/11.
** Orange County may interview Reentry procedures at a later date, but no later than 90 days from 12/14/11.

APPENDIX G: EVALUATION CRITERIA DETAIL

Table G.1 Day Two: *SDAC & Field Activities*

Criterion	Method	Artificialities
1.a.1	None	
1.b.1	None	
1.c.1	Limited Demonstration	Key SDAC management positions only. Fiscal and Logistics will not be demonstrated. Only Sections with activities will be demonstrated. Limited demonstrations of the Protective Actions Unit, Dose Assessment Unit, Field Monitoring and Sampling Branch, Sample Receipt & Processing, and the Decontamination Unit will be performed. SDAC plans will not be updated during exercise play. Applicable SDAC/FRMAC plans will be provided as input data to applicable exercise plan but will not be updated during the exercise. The SDAC State Advisory Team will be demonstrated for exercise play and not evaluation
1.d.1	Limited Demonstration	CDPH procedures indicate the FRMAC will provide radios, however due to the limited participation of FRMAC communications will be provided by the State.
1.e.1	Limited Demonstration	Cal EMA will provide a limited demonstration to support the management of the SDAC CDPH will provide a demonstration of Field Activities as specified in 4.b.1.
2.a.1	Interview	EWEC will be demonstrated through interview during play
2.b.1	None	
2.b.2	None	
2.c.1	None	
2.d.1	Limited Demonstration	The SDAC controller will brief players regarding sample and analysis planning and implementation planning that has occurred up to the start of the exercise play. The sampling and analysis plan and implementation plan will not be updated during exercise play. The planning output from exercise play will consist of drafted SDAC/FRMAC Action Requests on applicable forms. Dose assessment calculations will be limited to quality control over exercise data for one sample each of soil, water, and vegetation data provided by the FRMAC (and controllers).

		Protective Actions Unit will provide Ingestion PARs
2.e.1	Limited Demonstration	Relocation and Return PARs will be based on FRMAC products based on T+2 days and T+7 days data, where T is the time of the end of release A generic reentry plan will be developed based on the first time point
3.a.1	Limited Demonstration	Limited to only the field teams. Will not address plume phase issues.
3.b.1	None	
3.c.1	None	
3.c.2	None	
3.d.1	None	
3.d.2	None	
3.e.1	Limited Demonstration	Cal EMA and CDPH will work with Local Jurisdictions to obtain ingestion information for the SDAC as necessary for limited demonstration of these criteria.
3.e.2	Interview	CDPH, CDFA, and Local Jurisdictions will demonstrate through interview the ORO implementation of ingestion decisions.
3.f.1	Interview	Orange County will demonstrate through interview the ORO implementation of reentry decision.
4.b.1	Demonstration	CDPH will demonstrate two field teams. One team will proceed to field sampling and measurements and complete their demonstration upon arriving at the sample receipt section. The other team will receive samples and forms as a controller inject and proceed immediately to sample receipt and perform the sample transfer and worker/instrument/vehicle DECON.
4.c.1	Comment	The CDPH Richmond Laboratory demonstrated this criteria on: May 18, 2011
5.b.1	Limited Demonstration	Demonstration credit requested for this criteria for the State and Local public info response to the Fukushima Dai-Ichi nuclear incident. All documentation submitted.
6.a.1	Limited Demonstration and interview	Emergency Worker DECON will be demonstrated up to utilization of available FRMAC resources. Due to limited FRMAC support the remainder of the process will be performed through interview.
6.b.1	Demonstration and interview	Emergency Worker equipment and vehicle monitoring will be demonstrated. Decontamination will be demonstrated through interview.

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