STP Ingestion Exercise
June 12-13, 2018

Testing the Integration of Federal, State, Local & Utility Radiological Response and Recovery Capabilities
# Exercise Schedule & Scenario

## DAY 1 – PLUME PHASE

- **Image:** Map showing evacuation route.

## DAY 2 – INGESTION PHASE

- **Image:** Map showing location and exclusion zones.

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**Legend:***
- Major Road
- Minor Road
- Restricted Area
- Evacuation Route
Pre-Exercise Preparations

• Exercise Planning Team (2-year Planning Cycle)
  – Extent of Play
  – Scenario Development
  – Exercise Participants

• Plan Reviews
• Training
• Recovery Seminars
• Dress Rehearsal
Exercise Goals/Objectives

- Successfully demonstrate all Offsite FEMA REP Program evaluation criteria & Onsite NRC Objectives
- Integrate Federal, State & Utility response capabilities
  - DOE RAP Field Teams
  - EPA Lab & ASPECT
  - Federal Radiological Advisory Team
  - DSHS Regional Health Emergency Preparedness & Response Resources
  - STP ERO & Offsite Field Teams
- Test multiple laboratory capabilities
  - Coordinate receipt of large number of samples
  - Prioritization of Samples
  - Assign Samples to Labs based on acceptance criteria
Day 1 – STP
On-Site Response Operations

- Control Room (CR)
- Technical Support Center (TSC)
- Operations Support Center (OSC)
Day 1 – STP EOF
Accident Assessment

Where State/Feds work with STP to
• Assess Plant Data
• Obtain Dose Projections & Plume Models
• Agree on PARs to give the county

Usually no state/federal response onsite, except for NRC.
State Room at the EOF
Day 1 – County EOC
Radiation Liaison

• Assist locals in interpreting dose projections & plume models
• Provide PARs to locals & emergency workers based on data assessed.
Public Notification Methods

- Sirens
- Tone Alert Radios
- Emergency Alert System (EAS)
  - Radio Station
  - National Weather Service
- Auto Dialer
  - Reverse 9-1-1 / 2-1-1
Day 1 – JIC
Public Information / Media

- Provide timely protective action recommendations to the general public
- Conduct news media briefings
- Address rumors
State Team at JIC
Day 1 – Staging Area
Deployment & Activation
DSHS Staging Area
Contamination Control
Mobile Labs
Sample Analysis

DSHS Mobile Lab
DSHS Staging Area
DOE RAP Team
Monitoring & Air Sampling Operations
Communications
Communications
RadResponder

Assess Data

General Information

Collection Date: 4/7/2015 2:06 pm
Field Team: Env Team (Texas DSHS)
Collected By: Cortez, Ruben
Collected By: Texas DSHS
Organization:
Recorded By: Cortez, Ruben
Recorded By: Texas DSHS
Organization:
Radiation Type: Gamma
Location: 28.793545, -96.045441
Data Source: iOS
Description:
Raw Value: 4.40000 uR/hr
Standardized Value:
Window Open: No
Meter: Ludlum 9DP - SN#: Env/Inspection - PN#: 537-0
Trust Level: Level 4
Assessment Status: Pending

Gamma: 4.4 uR/hr
Date: 4/7/2010 14:06
Field Team: Env Team (Texas DSHS)
Collected By: Cortez, Ruben - Texas DSHS
Recorded By: Cortez, Ruben - Texas DSHS
Data Source: iOS
Assessment Status: Pending...
RadResponder – STP Exercise
Day 1 – EPA ASPECT
Flyover with Real-Time Readings
Day 1 – EPA ASPECT
Flyover with Real-Time Readings
Describe how the County will implement a plan of re-entry for emergency workers, farmers and possibly residents:

1. Identify boundaries where Re-entry areas will remain restricted (and additional T/ACPs if needed)
2. Describe what PPE and instructions (ex: stay times) will be given to those entering the restricted areas
3. Explain how those leaving the restricted areas will be monitored and decontaminated
Advanced Party Meeting
Day 2 – Staging Area
Environmental Monitoring & Sample Collection

SAMPLE LOCATIONS
(Where they are in reference to the FRMAC Dose Projection Maps)
Agricultural Product Map
Environmental Sampling
Environmental Sampling
Environmental Sampling
Environmental Sampling
Day 2 Tabletop Exercise

- SitRep
- Scenario Packets/Maps
- Mini-Scenarios
  
  Each Table Has Focused Issues that Address:
  
  - General Public Health and Safety
  - Economic Sustainability and Recovery
Day 2 Tabletop Exercise

EOF Table - Plant Recovery & Emergency Worker Exposure Control...

STP is coordinating with the County and State to ensure worker safety. Based on the areas indicating exceeded occupational exposure limits:

1. What will the protective actions be for the Emergency Workers at STP?
2. Describe how this decision will be coordinated amongst STP, County and State.
Day 2 Tabletop Exercise
County EOC Table -
Day 2 Tabletop Exercise
State & Regional Tables

Must identify:

• Affected agribusinesses
• Food stores and restaurants in area
• Drinking water sources
• Where public information regarding the safe handling of food is being distributed?
• What more is needed?

Where we are in the growing season determines priorities...
Embargo

- Commercial ban to prevent contaminated food products from reaching the market

- Embargo could expand or shrink as more data becomes available
Food Protection and the Embargo

• Must weigh short term economic damage from the embargo vs. the long term reputation of Texas agriculture

• Data can drive these decisions
## Ag Economics

<table>
<thead>
<tr>
<th>Item</th>
<th>Year</th>
<th>Planted Acres</th>
<th>Harvested Acres</th>
<th>Yield per Acre</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crops</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn for grain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for Crop</td>
<td>2017</td>
<td>33,700</td>
<td>31,600</td>
<td>106.0 bushels</td>
<td>3,349,000 bushels</td>
</tr>
<tr>
<td>Cotton, Upland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for crop</td>
<td>2016</td>
<td>32,400</td>
<td>29,200</td>
<td>745.0 pounds</td>
<td>45,340 480 lb. bales</td>
</tr>
<tr>
<td><strong>Rice</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for crop</td>
<td>2016</td>
<td>17,200</td>
<td>16,000</td>
<td>8,060.0 pounds</td>
<td>1,290,000 cwt</td>
</tr>
<tr>
<td><strong>Sorghum for grain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total for Crop</td>
<td>2017</td>
<td>18,500</td>
<td>18,150</td>
<td>98.3 bushels</td>
<td>1,783,800 bushels</td>
</tr>
<tr>
<td><strong>Livestock</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cattle</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Cattle, January 1</td>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td>59,000</td>
</tr>
<tr>
<td>Beef Cows, January 1</td>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td>41,000</td>
</tr>
</tbody>
</table>
• Hunting and fishing restrictions may be larger than that of an agricultural embargo
• Impacts would take time to assess
• Season again plays a key role in any recommendation
Develop and provide timely messaging to the general public...
Day 2 Assessment Team

- Sample Results
- Calculate DIL - Food
- DRL - Relocation/Misc
- Compare Results
- Relay Recommendation

The sample results do not surpass the DILs.

(a) Due to the large difference in DILs for Ru-103 and Ru-106, the individual concentrations of Ru-103 and Ru-106 are divided by their respective DILs and then summed. The sum must be less than one.

\[ \text{Conc}_{\text{Ru-103(6800 Bq/kg)}} \times \text{Conc}_{\text{Ru-106(4200 Bq/kg)}} < 1 \]

(b) The sum of Cs-134 and Cs-137 must be less than the DIL of 1200 Bq/kg.
How did we do?

- FEMA Evaluation
- Non-Evaluated Federal Integration
Thank you

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