

EMERGENCY PLAN and JOHNSON COUNTY RECEPTION CENTER OVERVIEW



Duane Arnold Energy Center
Emergency Preparedness Department
April 21, 2014

Duane Arnold Facts



- Built in 1974 at a cost of approximately \$300 Million,
- Located north of Palo and employs about 600
- Licensed renewed Jan. 2011
 - regulated to operate through 2034
- Generates approximately 615 megawatts
- Supplies enough power for over 500,000 households a year
- 70% owned by NextEra Energy Resources, and 30% by Central IA Power and Corn Belt Power Cooperative

Background

Nuclear Safety



DAEC And Other U.S. Nuclear Plants Have A four-tiered approach to safety

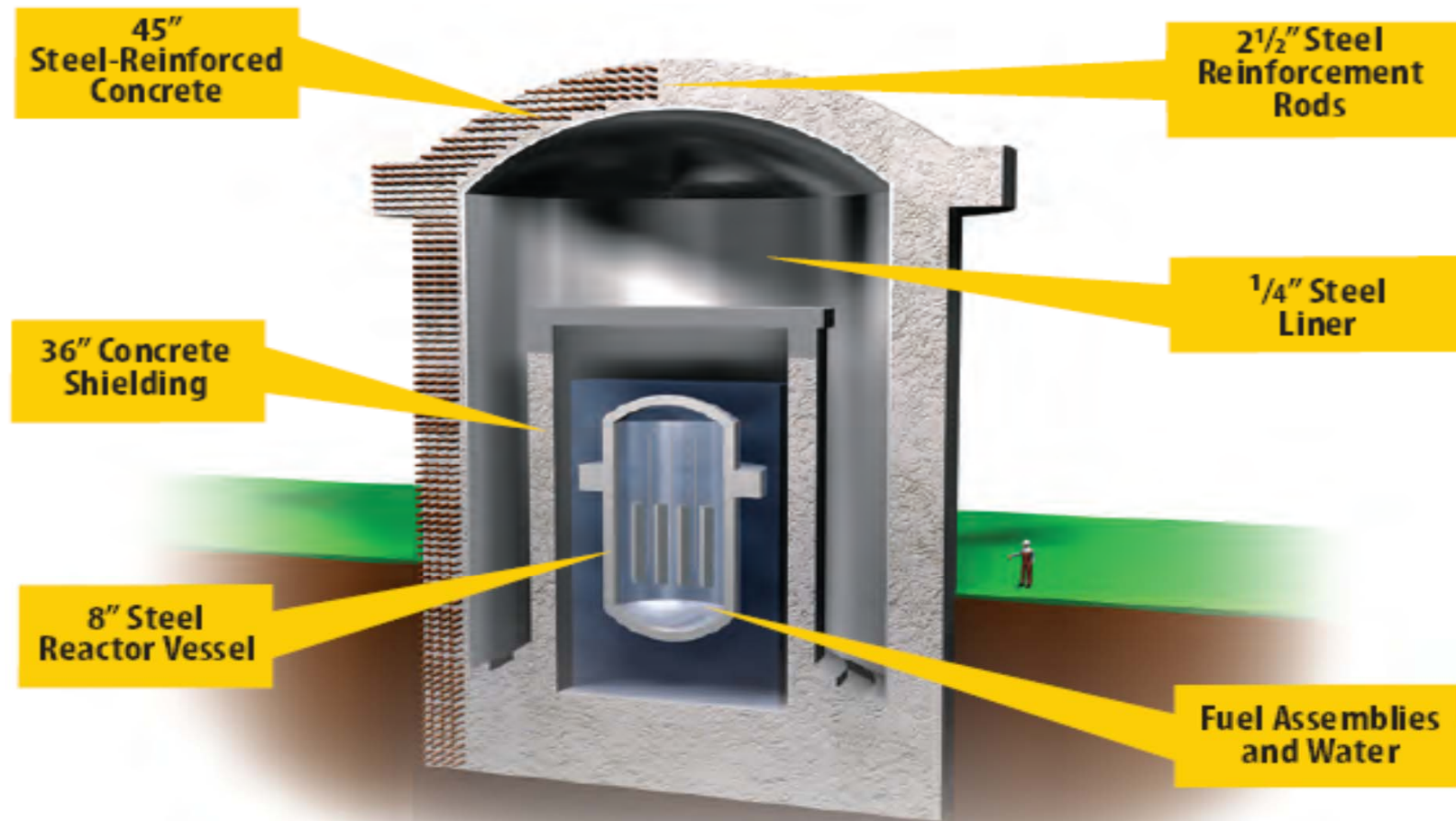
- High Security
- Safety in depth of construction
- Highly trained operators
- Strict regulations

Safety and Security at America's Nuclear Power Plants



Nuclear Safety

U.S.-Style Nuclear Reactor—Defense in Depth



Nuclear Safety

- Highly Trained Operators



Control Room Training Simulator

Operating crews are in training 1 out of every 6 weeks for as long as they hold a license.

Nuclear Safety

– Regulation and Oversight



On-site



**Nuclear Regulatory
Commission
(NRC)**

Off-site



**Federal Emergency
Management Agency
(FEMA)**

Emergency Preparedness



RADIOLOGICAL EMERGENCY RESPONSE PLAN



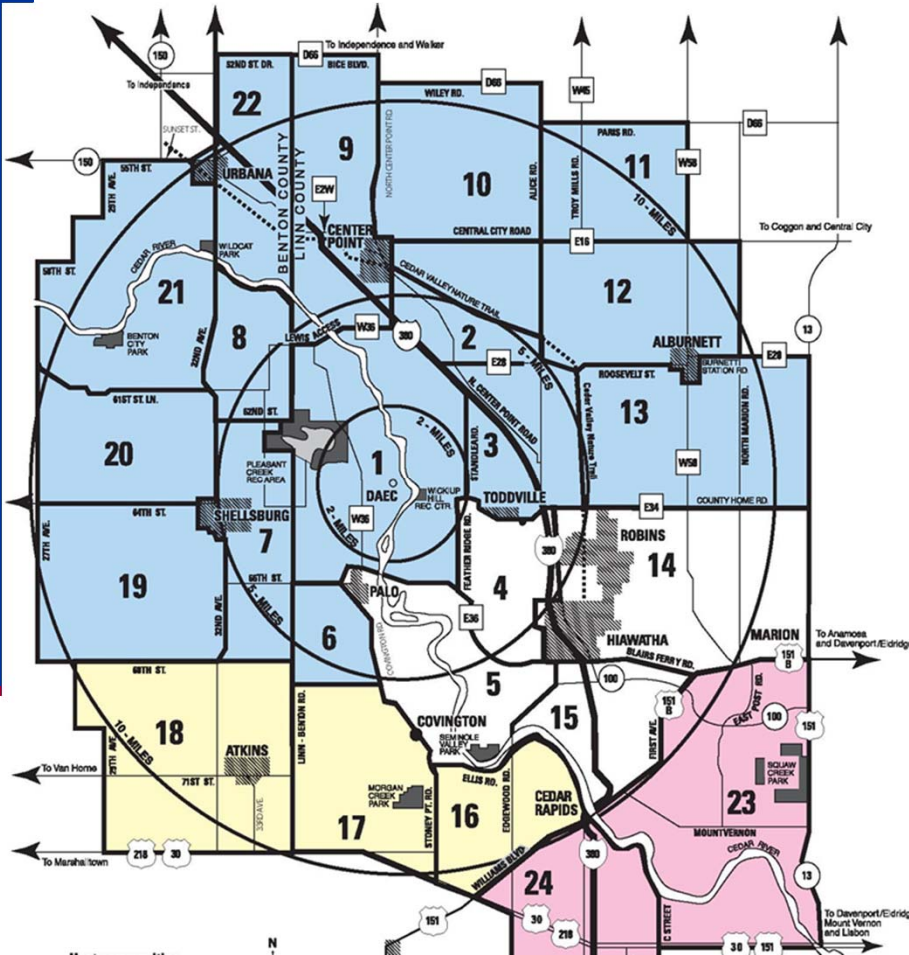
BACKGROUND

Plan Requirements



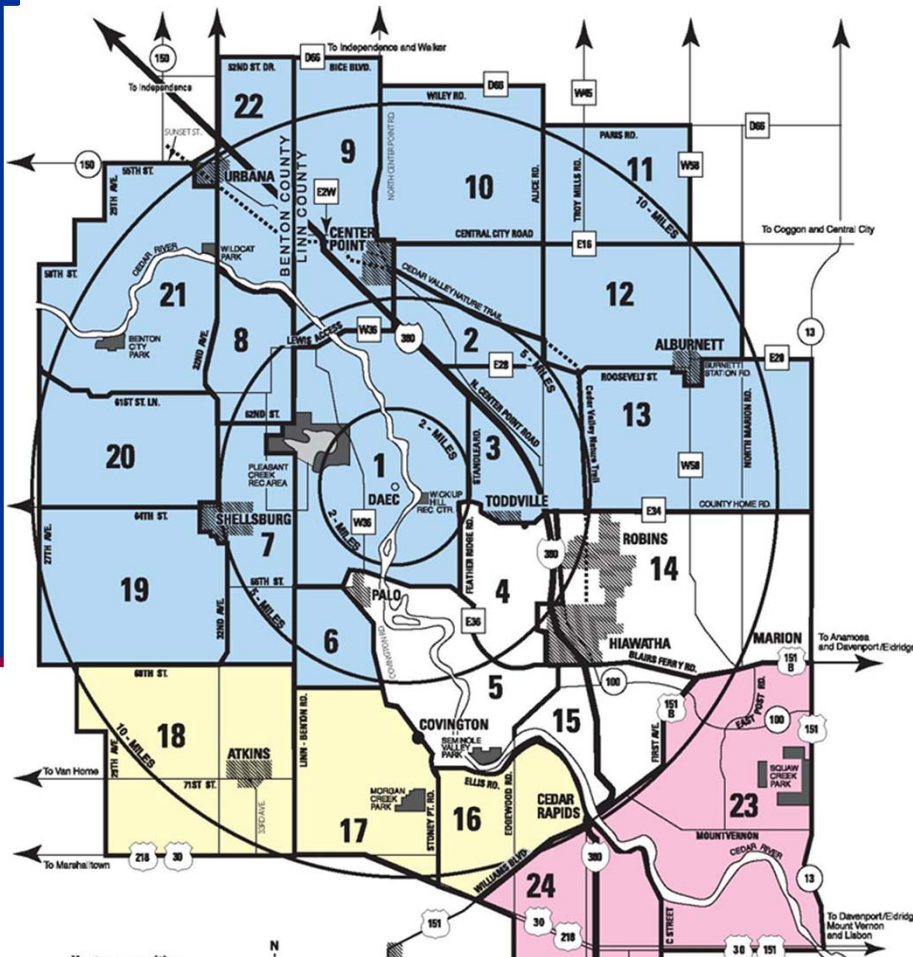
- **Response to Three Mile Island**
- NUREG 0654, issued in 1980
- **“Provide a common reference** and guidance source for .. State and local governments and nuclear .. operators to develop response plans and ensure preparedness (training) of nuclear power plants.”
Common vocabulary to discuss what is occurring at the power plant and the event’s potential affect the public in the Emergency Planning Zone (EPZ)

EPZ Concept Risk Counties



- Federal Regs require emergency plans in place for a 10-mile radius around the plant
- EPZ is broken down into 24 subareas, bounded by major roads for ease in describing
- Linn and Benton are “Risk” Counties

Evacuation /Reception Centers Host Counties



Location of 4 – Reception Centers

1. Buchanan Co./
Independence Mental
Health Institute
2. Marshall
Co./Marshalltown
Central Fairgrounds
3. Johnson Co./Iowa City
Johnson Co.
Fairgrounds
4. Scott County/Eldridge
North Scott High School

Radiological Emergency Preparedness

- **Concept of Operations**

- **Utility Response**

- Recognition, classification, notification, and protective measure recommendation

- **Risk Counties Response**

- Evacuation/shelter in place, protective actions, traffic/access control, EW Workers monitoring and decontamination, recovery

- **Host Counties Response**

- Evacuee monitoring and decontamination, traffic control and shelter/reception

- **State Response**

- Protective Action Recommendations, monitoring teams, coordination of federal agencies/response

Radiological Emergency Preparedness

- **Host County Response**
 - Activate and operate Emergency Facilities and equipment
 - Provide Assistance as Requested
 - Assist in traffic control as needed
 - Establish Reception and Shelter Functions
 - Communicate and coordinate with state on changes in status (plant and protective measures)

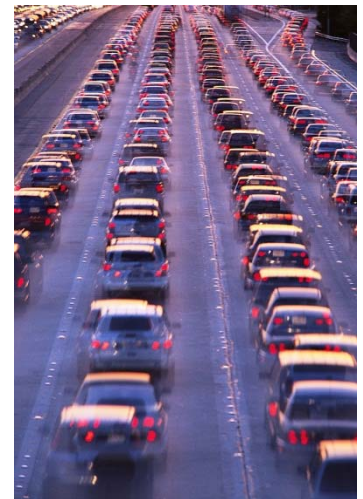
Protective Actions

Evacuation



Local authorities may recommend to evacuate potentially affected sub areas.

- The public will be advised to go to reception centers. Evacuation routes, Reception Center information, and other emergency details are contained in the Yellow Pages and DEX phone books distributed within the EPZ and some surrounding counties.



Types of Protective Actions

Sheltering



- **General Sheltering:** Persons are to remain in-doors with doors and windows closed and ventilation systems shut off
- **Selective Sheltering:** Selected individuals or groups of individuals not able to physically or psychologically withstand evacuation may remain indoors as indicated for General Sheltering

Emergency Classifications



What will cause the State and Local Authorities to consider protective actions for the public?

EMERGENCY ACTION LEVELS

Notice of Unusual Event

Lowest of 4 Emergency Action Levels



- A **minor problem** has occurred at the plant
- There is no release of radiation requiring offsite response
- Designated local authorities are informed
- **No action is needed** by the public
- DAEC contacts Host county EMAs

DAEC Unusual Event: June 12, 2008



The record levels on the Cedar River marooned outbuildings and circled the station's cooling towers, but never reached the plant's operating facilities.

Alert



- Event or Hostile Action causes (actual or potential) **degradation in safety** at the plant
- Small release of radiation well within EPA guidelines may occur
- Designated local authorities are **placed on standby**
- **No public action needed**
- DAEC, State & Risk counties contact Host County EMAs.
- Host County response agencies contacted as needed by Host EMA





Site Area Emergency



- Event or Hostile Action causes major failures (actual or potential) in safety systems at the plant .
- No release of radiation beyond plant boundaries, which could exceed EPA guidelines.
- **Public action may be needed.**
- **Indoor** and **Outdoor Warning Systems** are sounded.
- **Public instructions** announced on the Emergency Alerting System (EAS) stations.

Site Area Emergency



- Onsite and offsite **environmental monitoring teams** are dispatched (DAEC and State of Iowa Public Health).
- Risk County School Districts may take precautionary measures to relocate school children and staff out of potentially affected sub-areas.
- Special needs facilities in potentially affected sub-areas may, as a precautionary measure, be evacuated.
 - Evacuees from care facilities (hospitals, nursing homes, group homes) requiring **ambulance transportation** will be transported to the [U of Iowa Hospitals and Clinics](#) in Iowa City. Those **taken by bus** will be transported to [Johnson Co Fairgrounds](#).

Site Area Emergency – Continued



- Host county EMAs may partially activate to monitor event activities
- Host county agencies ready Reception Centers and place personnel and facilities on standby

General Emergency



- An Event or Hostile Action at the plant causing loss of containment or loss of control of the plant has occurred
- **Potential for a release** of radiation above EPA guidelines off-site
- **Outdoor and Indoor** Warning Systems are sounded again
- **Instructions** for public action are announced on **EAS stations**

General Emergency – Continued

Lowest of 4 Emergency Action Levels



- **Expected to impact the general public**
 - **State/Local authorities** will decide whether to evacuate the general population in affected areas or shelter in place.
 - School children will be reunited with their families at Host County Reception Centers



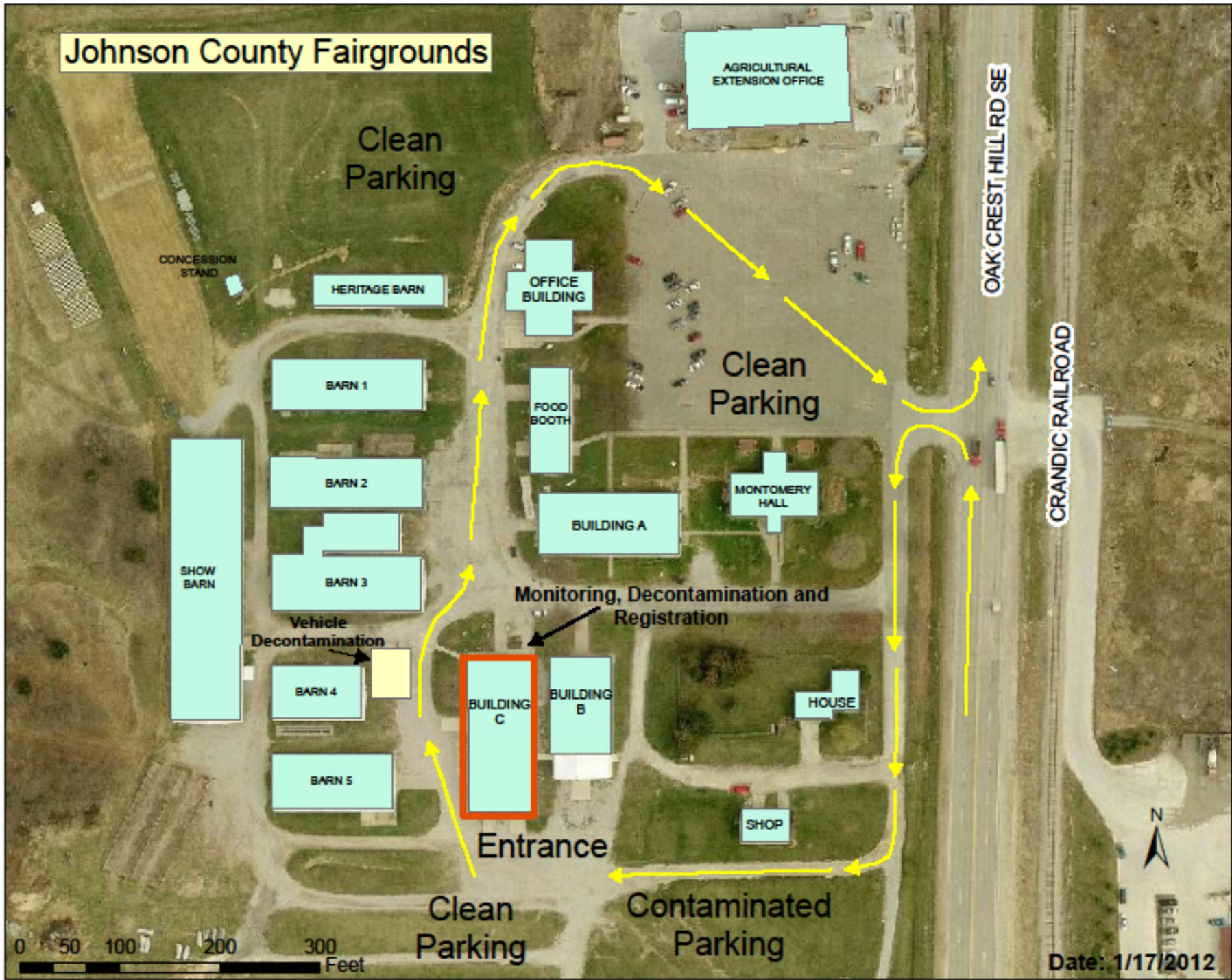
JOHNSON COUNTY RECEPTION CENTER

Johnson County FDs and HazMat Role

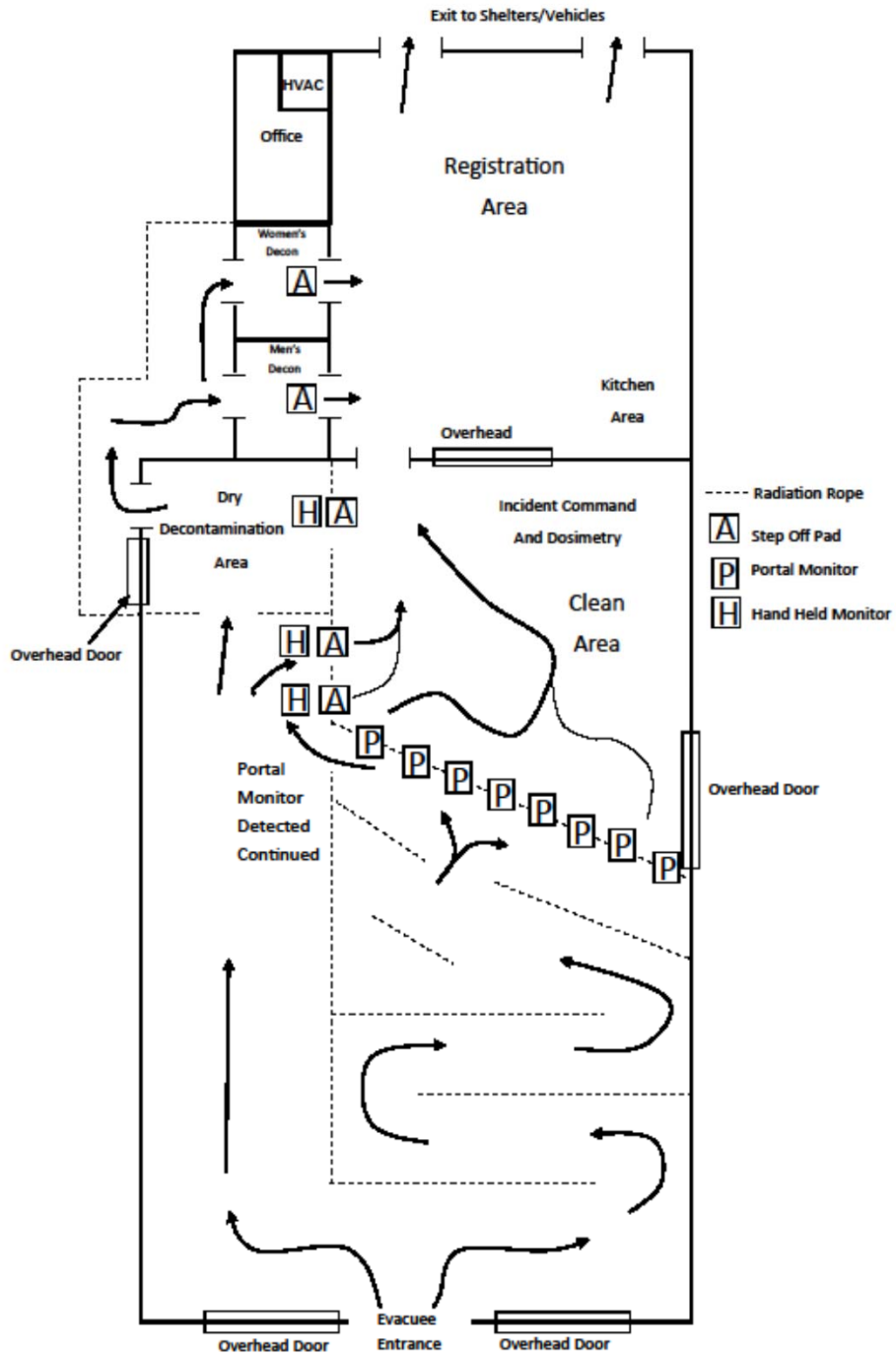


- ICFD and Johnson County Hazmat Team – IC and Portals
- Hills – Personnel Monitoring/Decon
- Lone Tree, Coralville, and North Liberty – Vehicle Monitoring/Decon
- All will assist with the set-up of the Reception Center
- Entire response will be coordinated through the Johnson County EOC

Johnson County Fairgrounds



Date: 1/17/2012



MONITORING

Skill Sets to Practice



■ Portal Monitors

- Don 2 pair of gloves
- Source check required
- Limitations
 - Weight - 250 lbs.
 - Height – 6'5"
- Articles being carried ie. Baby must be monitored using MCB2 meter
- Issue either clean tag or contamination report

MONITORING

Skill Sets to Practice



■ MCB2 Meters

- Complete dress out
- Source check required
- Establish background to determine contamination
- Ask for tag or location form
- Have person stand with arms at side, slightly elevated, and legs shoulder width apart
- Pay special attention to head, mouth, nose, shoulders, hands and feet

DECONTAMINATION

Skill Sets to Practice



■ Personnel Decontamination

- Dry Decon – use tape, Maslin cloth, if possible have them remove outer clothing
- Use caution to avoid contamination from entering body
- Put contaminated clothes, tape, materials in designated controlled storage
- Three attempts, if no significant reduction send to wet decon
- Complete Personnel Contamination Report

DECONTAMINATION

Skill Sets to Practice



- **Vehicle Monitoring/Decontamination**

- Establish background/contamination
- Monitor hands and feet of driver and passengers, if clean give them each a Clean Tag
- If contaminated issue the driver the top copy of the Contaminated Vehicle/Article. Place copy on dash board, Instruct driver to drive vehicle to Decon Area. At the Decon Area have driver and passengers don booties, leave keys in the vehicle and direct to reception center for monitoring/decon.



BREAK OUT AND PRACTICE



Thank You!

Duane Arnold Energy Center
Emergency Preparedness Department
and

The Department of Homeland Security and Emergency
Management

in Partnership with
Benton, Linn, Buchanan, Johnson, Marshall & Scott
County Emergency Management Agencies