Fermi 3 Nuclear Power Plant
Site Orientation/Security Program Overview

DTE Energy

Detroit Edison Proprietary Artist's Rendering of Site

Introduction

- Peter Smith, Detroit Edison, Director Nuclear Development-Licensing
- Mark Findlay, Detroit Edison, Manager, Nuclear Security
- Tim Duffy, Detroit Edison, General Supervisor, Nuclear Security Operations

The information contained in this presentation is NOT classified or considered Safeguards Information

Agenda

- Welcome/Introductions
- DHS Visit Overview
- Site Orientation
- Security Program Overview
- Site Tour
- Questions

Fermi 3 Background

- Submitted Application on September 18, 2008
- Application Accepted for Docketing on November 25, 2008
- General Electric/Hitachi (GEH) Economic Simplified Boiling Water Reactor (ESBWR) Selected
- Located on Fermi Site

Security Features of ESBWR Design

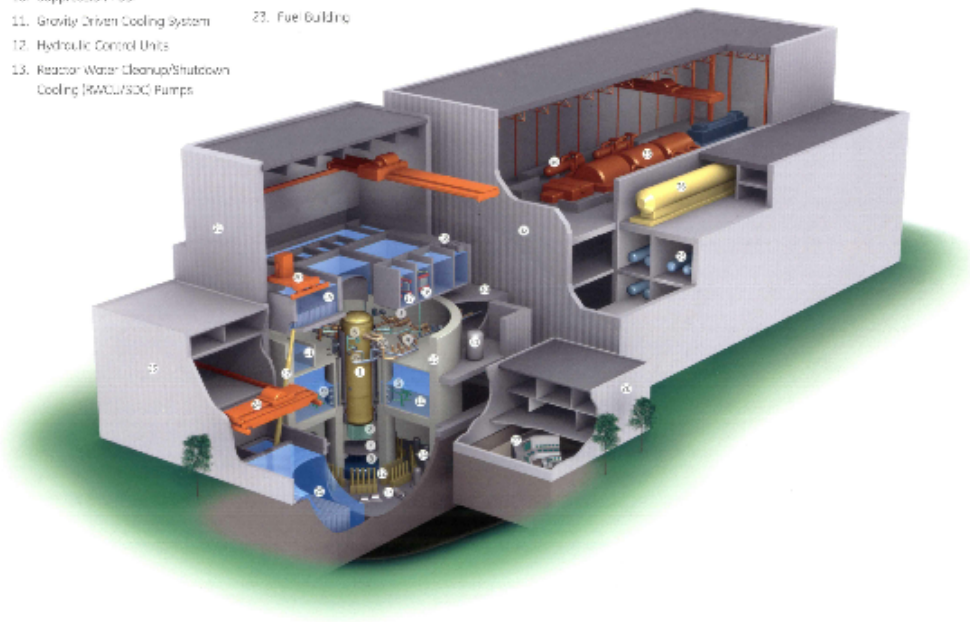
- "Passive" Safety Systems
  - No Emergency AC Power Sources Needed
- Ultimate Heat Sink Contained in Reactor Building
- Main Control Room Located Below Grade
- Spent Fuel Storage Pool Located Below Grade

Security Features of ESBWR Design

fact sheet

ESBWR

1. Reactor Pressure Vessel
2. Fine Motion Control Rod Drives
3. Main Steam Isolation Valves
4. Safety/Relief Valves (SRV)
5. SRV Quenchers
6. Depressurization Valves
7. Lower Drywell Equipment Platform
8. BiMAC Core Catcher
9. Horizontal Vents
10. Suppression Pool
11. Gravity Driven Cooling System
12. Hydraulic Control Units
13. Reactor Water Cleanup/Shutdown Cooling (RWCU/SDC) Pumps
14. RWCU/SDC Heat Exchangers
15. Containment Vessel
16. Isolation Condensers
17. Passive Containment Cooling System
18. Moisture Separators
19. Buffer Fuel Storage Pool
20. Refueling Machine
21. Reactor Building
22. Inclined Fuel Transfer Machine
23. Fuel Building
24. Fuel Transfer Machine
25. Spent Fuel Storage Pool
26. Control Building
27. Main Control Room
28. Main Steam Lines
29. Feedwater Lines
30. Steam Tunnel
31. Standby Liquid Control System Accumulator
32. Turbine Building
33. Turbine-Generator
34. Moisture Separator Reheater
35. Feedwater Heaters
36. Direct Contact Feedwater Heater and Tank



HITACHI

For more information, contact your GE Hitachi Nuclear Energy sales representative or visit us at www.ge-energy.com/nuclear

© 2006 GE Hitachi Nuclear Energy. All Rights Reserved.

DEA-[illegible]

New Fermi Site Layout

- New Access Road/Gate
- Owner Controlled Area Changes
- Common Protected Area
- Common Access Portal/Vehicle Entry
- Electrical Switchyards
- Lake Water Intakes
- Fermi 2 Dry Fuel Storage
- New Warehouses
- Fermi 1 Demolition

New Fermi Site Layout

Detroit Edison Proprietary Owner Controlled Area Layout

New Fermi Site Layout

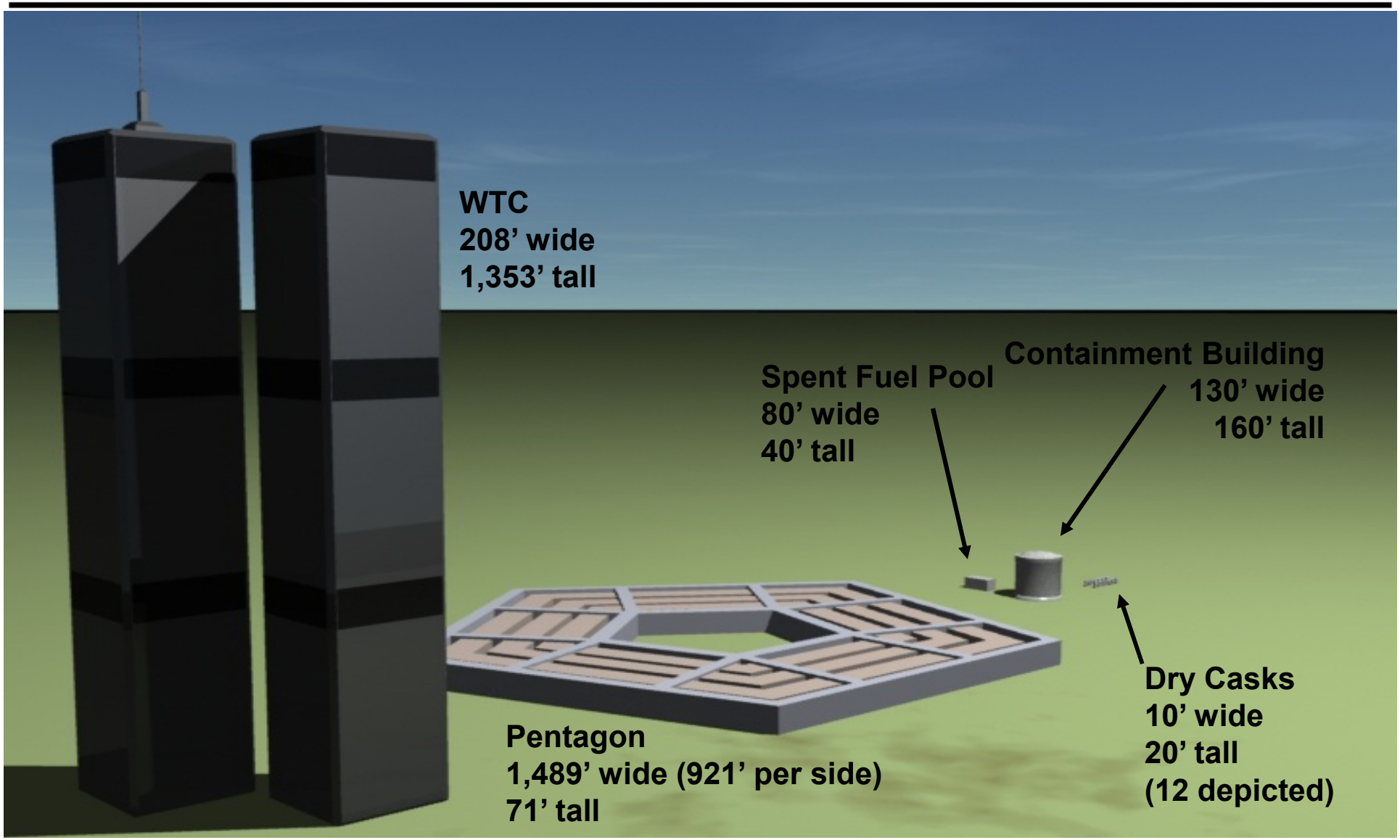
Detroit Edison Proprietary Protected Area Layout

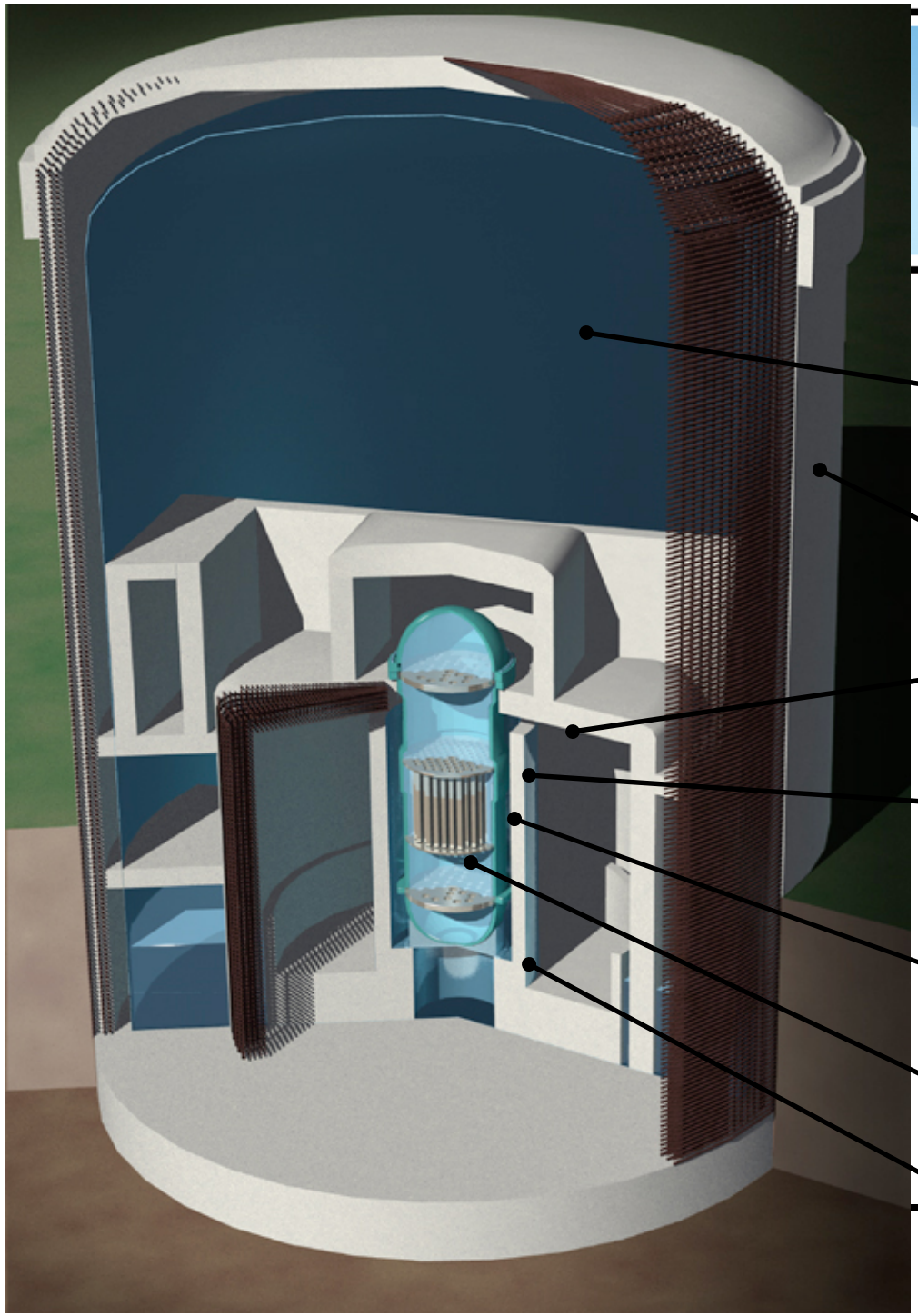
Nuclear Plant Safety and Security Overview

DTE Energy

- Comprehensive measures for safety and security
  - Robust containment, spent fuel pools, and spent fuel storage containers
  - Redundant and diverse plant safety systems
  - Screened workforce
  - Access Controls
  - Trained plant staff, skilled in accident and event response
  - Comprehensive emergency plans
  - Rigorous security plans and procedures
  - Armed security forces
  - Response strategies

Comparative Size of Targets





Multiple Layers of Protection

DTE Energy

Containment Vessel
1.5-inch thick steel

Shield Building Wall
3 foot thick reinforced concrete

Dry Well Wall
5 foot thick reinforced concrete

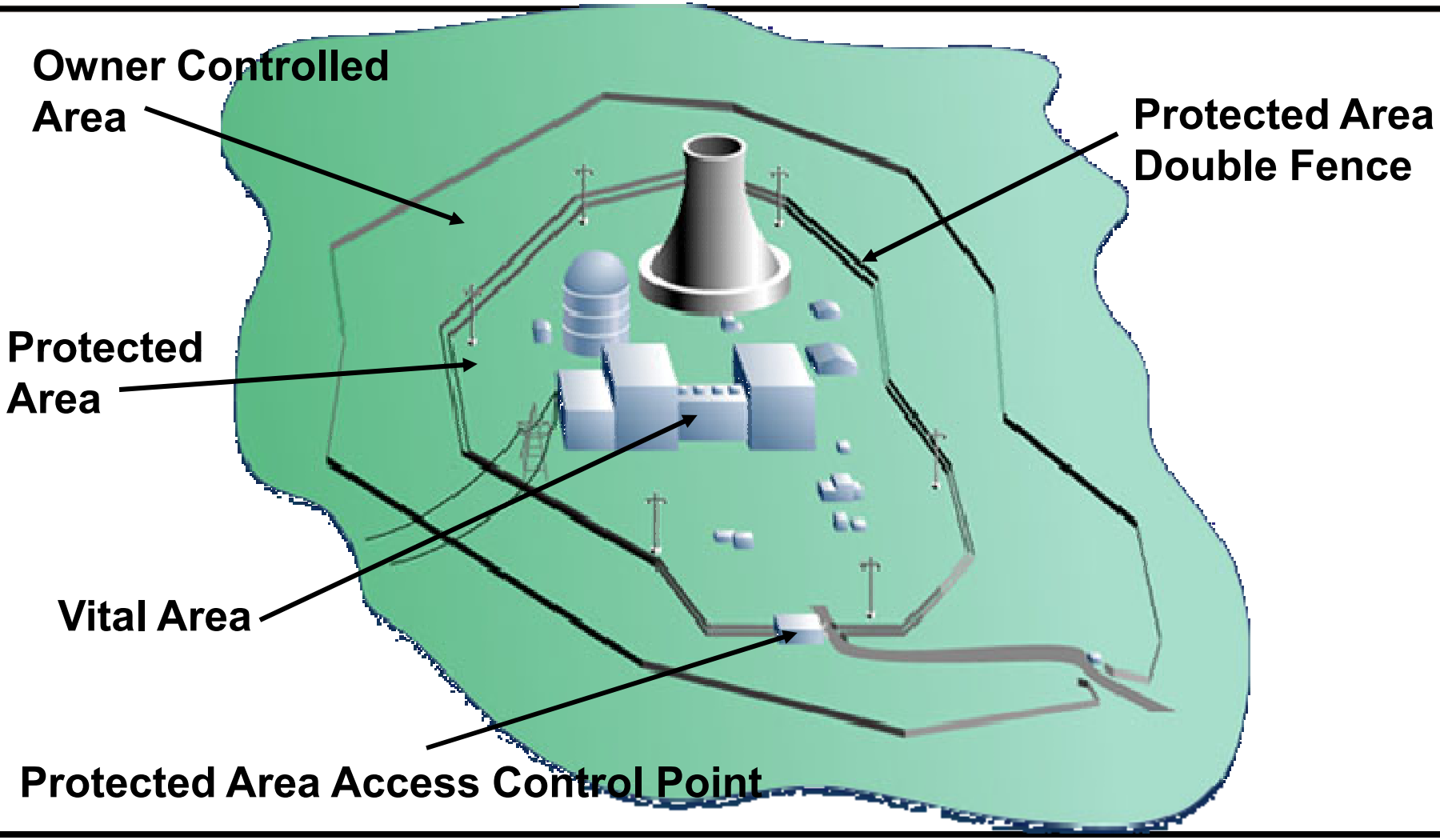
Bio Shield
4 foot thick leaded concrete with
1.5-inch thick steel lining inside and out

Reactor Vessel
4 to 8 inches thick steel

Reactor Fuel

Weir Wall
1.5 foot thick concrete

Nuclear Plant Security Areas



Regulatory Basis For Nuclear Power Reactor Security Programs: The Design Basis Threat

DTE Energy

- Well trained dedicated adversaries (the number is safeguards information)
- Determined violent assault
- (Weapon types are safeguards information)
- Insider assistance
- Incapacitating agents
- Explosives (weight and type are safeguards information)
- Vehicle bombs
- Vehicles as means of entry (types are safeguards information)

Security Program Overview

- Provides defense in depth
- Utilizes an NRC reviewed and approved tactical response plan
- Employs a combination of:
  - Several armed security response officers trained in anti-terrorist tactics
  - Engineered physical protection system for adversary detection, assessment, and interdiction
  - Engineered, hardened defensive fighting positions
  - Appropriate adversary delay and engagement barriers

Plant Weapons and Tactical Equipment

Physical Security Measures

Physical Security Measures

- Concrete floors, walls and ceilings
- Steel locked and alarmed doors
- Key card access control
- Steel barriers

Command and Control

- Central and Secondary Alarm Stations
  - Two redundant stations
  - Monitors detection and assessment
  - Controls PA gate access
  - CAS/SAS Operators provide command and control function if supervisory personnel are incapacitated / unavailable.

Personnel Access to Protected Area

- Search Train
  - Explosive detection
  - X-ray machines
  - Metal detectors
- Personnel Identification
  - All personnel are positively identified prior to entering the Protected Area
  - All equipment tested on an ongoing basis

Security Force Training

- Consists of:
  - Initial Security Officer Training (320 hours)
  - OJT (40-80 hours)
  - Continuous Security Training (>140 hours/year/officer)
  - Dedicated Security Training Staff

Tactical Response Training

- Tabletop training
- Tactical weapons training
- Force-on-force training

Coordination With Other Agencies

- Other Nuclear Plant Security Organizations
- Law Enforcement
  - Monroe County Sheriff Department
  - Michigan State Police
  - National Guard (requires order from Governor)
  - FBI (Federal Agency)
  - Letters of agreement
  - Response planning
  - Drills
  - Biennial meetings and reviews of Letters of Agreement

Post 9/11 Security Improvements

- Significant Capital Costs
- Upgrades for Enhanced Protective Strategy
  - Response positions
  - Adversary delays
  - Video technology improvements
  - Detection system improvements
  - Improved survivability from vehicle bombs
  - Improved ability to protect against an adversary force
- Upgrades to the Vehicle Barrier System

NRC Graded Force on Force Exercises

- NRC Evaluated – Tightly Controlled
- Composite Adversary Force
- MILES Weapons
- Three complete exercises
- Proved the protective strategy is effective
- No issues, concerns, or findings

Summary

- Nuclear Power Plants are among the most hardened and secure private facilities.
- Significant improvements since 9/11 have strengthened the ability to protect these facilities.
- Protective strategy was successfully tested in a series of Force on Force exercises.
- Security strategies are substantial and can protect the plant against a wide range of potential adversary attacks.

DTE Energy

QUESTIONS?