

 **DTE Energy**  
Methodical and Consistent Leads to Success

Peter W. Smith – Director, Licensing & Engineering



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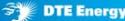
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**DTE Energy Overview** 

DTE Energy Co. (NYSE: DTE) is a diversified energy company involved in the development and management of energy-related businesses and services nationwide

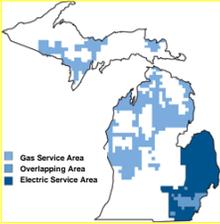
**Electric/Gas Utilities**

Our largest operating subsidiaries are DTE Electric and DTE Gas (formerly Detroit Edison and MichCon). Together, these regulated utility companies provide electric and/or gas services to more than three million residential, business and industrial customers throughout Michigan

**Non-utility Businesses**

Our electric and gas utility businesses have each been in operation for over a century. We have leveraged that wealth of experience and assets to develop a number of non-utility subsidiaries which provide energy-related services to business and industry nationwide

**DTE Service Area**



■ Gas Service Area  
■ Overlapping Area  
■ Electric Service Area

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**A new nuclear unit is potentially viable to meet anticipated Michigan electricity needs** 

- In 2006, DTE was considering options to meet Michigan's future electricity needs. Studies at the time indicated that Michigan potentially needed as much as 3800 MW of new baseload capacity by 2020
- In the regulatory climate (e.g., NP 2010, Part 52 licensing process) at the time, new nuclear generating capacity could potentially contribute to satisfying the anticipated demand
- Despite the 2008 economic downturn, DTE considers the option for a new nuclear unit can be important for a diverse generation portfolio, uncertainty in long term natural gas prices, retirements of aging fossil units, CO<sub>2</sub> and other environmental regulations

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**DTE Energy Strategy embraces standardization that promotes project efficiency** 

- A strategy for licensing and constructing a new nuclear plant was developed
  - Employ the combined license approach under Part 52 to fully license the plant before proceeding
  - Utilize the Design Centered Working Group (DCWG) approach as a Subsequent Combined License Application (S-COLA)
  - Fully embrace standardization with a high governance threshold for deviations from the Design Control Document (DCD) and the Reference Combined License Application (R-COLA)
  - Use the DTE Project Management Organization (PMO) to lead the project and build future capability
  - Conduct the project independent of the operating plant organization to minimize distractions
- Existing Fermi site selected for new plant
  - Site had space for an additional plant
  - Environmental and seismic siting issues would be minimized
- Detailed vendor evaluation process led to selection of the GE - Hitachi ESBWR technology

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**Fermi 3 would be co-located on the same site as Fermi 2** 



- Located in Monroe County near Newport, MI on western shore of Lake Erie
- Approximately 25 miles northeast of Toledo, OH
- Approximately 30 miles southwest of Detroit, MI
- Approximately 7 miles from US/Canadian International Boundary
- Site is part of the Lagoon Beach Unit of the Detroit River International Wildlife Refuge
- Partnership with US Fish & Wildlife Service to manage approximately 650 acres of the Refuge located at the Fermi site

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**Fermi 3 would be co-located on the same site as Fermi 2** 

- Fermi site is 1260 acres
  - Fermi 1: Liquid Metal Fast Breeder Reactor; shutdown in 1972; currently in SAFESTOR
  - Fermi 2: 1200 MWe GE BWR
- Fermi 3 located southwest of Fermi 2
- Fermi Unit 1 structures to be removed prior to Fermi 3 construction
- Key attributes
  - Site is suitable for additional nuclear unit
  - Readily accessible by major roadways, rail lines, and Lake Erie
  - Much of necessary infrastructure is already in place



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**DTE Energy PMO provides structure and builds future capability** 

- The PMO manages major capital projects for DTE Energy
- The PMO is a separate DTE Energy organization
  - Minimizes impact on day-to-day operations of other DTE organizations
- The PMO has mature and successful project management processes
  - Project Management Maturity Model (PMMM) Level 4 Certified
  - Successful track record on major DTE projects
  - ISO 9001 Certified and implements NQA-1 for the Fermi 3 QA Program
- Provided the process discipline to achieve the strategic goals
- Building future capability to manage a large EPC project

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**DTE Energy PM process supported efficient execution of the Fermi 3 COLA Project** 

- Project budget and scope controls
  - Engineering and technical tasks were contracted to various vendors depending on expertise
  - Costs to obtain COL were lowest in industry
- Robust governance structure allowed for timely decision making
  - Clear reporting relationships and domains of authority were specified and well understood
- Small DTE project staff allowed for streamlined processes and ability to react quickly to requests
  - Little staff turnover of key DTE and contract personnel during the life of the project provided additional efficiencies
- Risk management process recognized the possibility of several emergent issues and provided contingency planning processes
  - Major nuclear event – Fukushima Event
  - Fermi 3 becoming the ESBWR R-COLA
  - Delays in ESBWR Design Certification
  - Continued Storage Rule

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**Closely following the DCRA/DCWG approach was central to the Fermi 3 Strategy** 

- Regulatory Issue Summary 2006-06
  - Describes the NRC Design-Centered Review Approach (DCRA)
  - Encourages standardization of COLA content and responses to NRC requests for information
  - Applicants participate in DCWG
- DTE informed NRC of ESBWR selection in November 2007 and subsequently joined NuStart and ESBWR DCWG in December 2007
- The ESBWR DCWG identified an R-COLA and several S-COLAs
- Fermi 3 COLA was initially submitted as an ESBWR S-COLA in 2008
- Fermi 3 application became the ESBWR R-COLA in 2010
- Fermi 3 would be the first ESBWR COL Holder

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**DTE's Fermi 3 Strategy and adherence to the DCRA/DCWG approach simplified NRC review of the Fermi 3 COLA** 

- 10 CFR Part 52, Appendix E, and ESBWR DCD Revision 10 incorporated by reference in COLA
  - Supplements added where DCD required additional information to address site-specific considerations
  - No site-specific safety related structures
- One departure from DCD
  - To increase solid waste storage capacity in RadWaste Building
- One exemption
  - From 10 CFR Part 74 requirements for Special Nuclear Material Control and Accountability requirements

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**Constructive interactions with stakeholders contributed to project efficiency** 

- Began state and local government outreach early in the project
  - Continued periodic updates on project status
- Strong community support for building the Fermi 3 plant. DTE is viewed as a force for growth in the communities we serve and as a responsible corporate citizen
- State of Michigan government agencies were extremely timely and helpful
  - Environmental permitting
  - Emergency preparedness
- Constructive interactions with the NRC on key issues achieved favorable outcomes
  - Offsite transmission system environmental issues
  - Project Quality Assurance Program issues
- Stakeholder involvement during COLA preparation and review resulted in project improvements
  - Made significant revisions to site layout to minimize wetland impacts
  - Reduced impacts to undeveloped areas of site (e.g., parking garage, barge slip)
  - Corollary benefit: better site layout for construction activities

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**Opportunities: What would be done differently if we were to do this again** 

- Select a certified passive design to avoid parallel COLA and DCD review coordination
- Understand potential site environmental issues early in the project
- Perform site-specific Soil Structure Interaction (SSI) analysis early in the project

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**COL Status and Future Plans** 

- Fermi 3 COL Status
  - Final Environmental Impact Statement (FEIS) Published – January 2013
  - Final Safety Evaluation Report (SER) Issued – November 2014
  - NRC Mandatory Hearing (Uncontested) – February 2015
  - COL Issued – Anticipated in March 2015
- Future Plans
  - Maintain Fermi 3 COL to preserve Fermi 3 as an option
  - Advance ESBWR detailed design in collaboration with others
  - Be in position to build when enterprise needs dictate
- DTE Energy's success was due to developing a strategic plan and faithfully executing the plan in a controlled fashion

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