DTE Electric Comments Regarding Enercon's Draft Michigan Nuclear Feasibility Study Report
January 09, 2024

On December 11, 2023, Enercon Services East, P.C. under the direction of the Michigan Public Service Commission (MPSC) prepared an initial draft of the Michigan Nuclear Feasibility Study Report. The report captures the history, advantages, and implications of the nuclear industry within Michigan and provides insight into the future feasibility of nuclear power. DTE Electric has prepared initial written feedback on the draft report in advance of the Nuclear Feasibility Study Workshop on January 9, 2024. DTE continues to review the report and will provide additional feedback as necessary.

DTE appreciates the effort of the MPSC, MPSC Staff (Staff), Enercon Services East, P.C. and all parties involved in this collaborative process. DTE finds the draft report a valuable resource for documenting the history of the nuclear industry in Michigan and highlighting opportunities for advanced nuclear technologies.

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DTE has reviewed the initial draft of the Michigan Nuclear Feasibility Study Report and has the following feedback:

1. Areas of Opportunity:
    a. Section 1.1 – Overview of Nuclear Power Generation in Michigan (Page 12)
        i. DTE recommends adding mention of the Fermi 3 license to this section.
    b. Section 1.2 – Study Objective and Overview (Page 14)
        i. The report states it will consider the following per Public Act 166 of 2022: Additional efficiencies and other benefits that may be gained by coordinating with other advanced, clean energy technologies, including, but not limited to, hydrogen, direct air capture of carbon dioxide, and energy storage. The report further states that this information is included within Section 6. DTE recommends adding Section 4 as Section 4.1e – Small Modular Reactor Deployment includes reference of reactor pilots that utilize molten salt thermal energy storage.
    c. Section 4.2 – Siting Considerations for Potential New Nuclear (Page 94)
        i. Per the updated 2022 Integrated Resource Plan (IRP) regulatory requirements (Case No. U-18461), IRPs must include an environmental justice impact analysis. DTE recommends expanding the environmental justice section to include more industry research and analysis on the environmental and socio-demographic factors that are relevant to nuclear generation.
    d. Section 7.3b - Inflation Reduction Act (Page 115)
        i. DTE recommends additional discussion of the technology-neutral tax credits as an opportunity to support extended power uprates
    e. Section 7.7 – Policy Summary & Recommended Policy Actions for Michigan (Page 121)
        i. DTE recommends further developing the state policy recommendations section. Three examples of opportunities to consider are:
            1. Regulatory policies that recognize the role of nuclear energy in meeting decarbonization goals and encourage energy companies to pursue license extensions for the existing nuclear fleet as well as new nuclear technologies
                a. NEI has documented model state policies in this area
            2. Collaboration on federal funding opportunities
            3. Increasing funding for nuclear workforce development programs
                a. For example, Section 2 – Michigan Resources, Expertise, and Economic Impacts (page 35) references training programs at the University of Michigan Engineering and Monroe County Community College. DTE recommends leveraging learnings from other states, such as the Nuclear

Education Grant Fund established in Virginia (page 121), to increase funding for such programs.

f. Appendix 1 Section 5 – Power System Modeling (Pages 49-75)
    i. DTE recommends providing more detail on the emission reduction implications of a hypothetical new plant to clearly define how the study was performed with respect to the footprint modeled, build plan used, and CO_2 accounting methods.
    ii. DTE recommends providing a description on the method used, reason for year selection, and assumptions used to develop Table 5.3.

g. Extended Power Uprate (EPU) is not comprehensively covered in the report. DTE recommends including EPU within the scope of this report, including in Section 7.7 - Policy Summary & Recommended Policy Actions for Michigan (e.g., tax credits for EPUs).

h. Activity to develop small modular nuclear reactors (SMR) in Ontario, Canada is not discussed in the report.
    i. While the report mentions TVA's two-party agreement for GE's 300 MW SMR (page 95), it would be beneficial to include OPG's project for 1-4 reactors in Canada. Although the licensing will be different in Canada, the GE supply chain needed for the project could greatly benefit a future project in Michigan.

2. <u>Corrections to Report:</u>
    a. Section 3.1 - Evaluation of Current Nuclear Technology and Designs (Page 38)
        i. A correction is needed – Fermi is located "on the western shore of Lake Erie", not Lake Huron
    b. Section 6.1 Re-Purposing Power Plant Sites (Page 105)
        i. A correction is needed – As stated in the 2022 DTE Electric Integrated Resource Plan Settlement Agreement, the Monroe power plant will retire two units in 2028 and two units in 2032. See strikes and bolded edits.
            1. "Belle River Power Plant in 2026 and to repurpose the site into a natural gas peaker plant [270]. Furthermore, DTE Electric has also stated that it would retire **two coal units at Monroe in 2028 and two units in 2032** ~~its coal facilities at Monroe in 2028~~ and **study options to** augment the plant such that it becomes a combined cycle natural gas plant, with carbon capture, or to implement SMRs on site [270], **or implement other technology**."
    c. Section 7.5 State Policies (Page 120)
        i. A correction is needed – Section 7.5.b. The description of the Michigan Clean Energy Future Bill policy should be described to accurately capture the requirements.

3. <u>Questions:</u>

a. Section 1.6 – Primary Disadvantages of Nuclear Power Generation (Page 27)
    i. What year $ value is the $1800/kW to $11,000/kW in?
b. Section 5 – Nuclear Project Schedule Assessment (Pages 96-102)
    i. Are the timelines for the Gen III non SMR reactor or the SMRs included? Defining this at the beginning of the section would be helpful.
c. Appendix 1 Section 4 – Economic Impact Evaluation (Pages 34-48)
    i. What is the change case that this analysis is being compared to?
    ii. Is the CO_2 benefit and the economic benefit being conducted using the same overall method? That is, comparing something that would have happened if the hypothetical nuclear plant was not built with a plan that has a 60 year nuclear plant?
d. Appendix 1 Section 5 – Power System Modeling (Pages 49-75)
    i. Figure 5.16 – What were the assumptions used to select the resources in 2036? DTE Energy's Blue Water Energy Center (BWEC) is not included.
    ii. What is the source file for the capacity factor data shown in Figure 5.16? It would be helpful to show these graphs for the counterfactual cases as well to compare data. This may help explain the reasoning for Table 5.3.

DTE looks forward to further discussions and collaboration with MPSC Staff, Enercon, and industry stakeholders on the Michigan Nuclear Feasibility Study Report.

DTE Electric