



December 21, 2023

Ms. Tiffany Myers, District Supervisor
Water Resources Division
Michigan Department of Environment, Great Lakes and Energy (EGLE)
Jackson District Office
301 E. Louis B. Glick Highway - 4th Floor
Jackson, Michigan 49201

Re: Flue Gas Desulfurization Wastewater (FGD) Voluntary Incentive Program (VIP)/
Cessation of Coal Combustion (COCC) 2023 Annual Progress Reports
DTE – Monroe Plt
NPDES Permit No. MI0001848

Dear Ms. Myers,

This submittal is the follow-up annual progress report per 40 CFR 423.19(h)(3), and per Permit Section I.A.16.c. The following enclosures provide the updates as required by 40 CFR 423.19(h)(4).

On October 13, 2021, DTE Electric Company (DTE) submitted a Notice of Planned Participation (NOPP) for the Flue Gas Desulfurization Wastewater Voluntary Incentive Program per 40 CFR 423.19(h)(1). The following enclosures provide the information necessary for the annual progress report as required by 40 CFR 423.19(h)(3) and 40 CFR 423.19(h)(4).

On October 13, 2020, the Environmental Protection Agency (EPA) released the final version of the Effluent Limit Guidelines (ELG) Reconsideration Rule (2020 Rule) which updated the 2015 ELG Rule (2015 Rule). This 2020 Rule is the product of the EPA's "Reconsideration" of certain portions of the 2015 Rule, specifically addressing bottom ash transport water (BATW) and flue gas desulfurization wastewater (FGD WW).

The 2020 Rule established Best Available Technology (BAT) standard discharge limits for FGD WW discharges, and further, finalized the Voluntary Incentive Program (VIP) for FGD WW. Under the VIP, companies may choose to meet more stringent effluent limits established by EPA based on the model technology of membrane filtration or zero-liquid discharge. If a company chooses the VIP option, then the applicability date for FGD WW compliance will be December 31, 2028. The extended compliance deadline allows for additional time to design, pilot, procure, and install VIP compliant technologies since they are currently not as common and economically viable compared to physical and chemical plus biological treatment systems.

On July 26, 2023 the Michigan Public Service Commission (MPSC) approved DTE's Integrated Resource Plan (IRP). In this plan DTE is committed to retire two of the four Monroe units by December 31, 2028. Also in 2023, EPA issued a Direct to Final Rule that allows facilities planning to cease coal combustion operation by this date to submit a NOPP until June 27, 2023 if the facilities fulfill certain requirements regarding the proper submittal of a NOPP and subsequent annual reports. DTE submitted the Cessation of Coal NOPP for Monroe Power

Plant (MONPP) Units 3 and 4 on April 28, 2023 in accordance with 40 CFR 423.19(f)(1). For these reasons, Units 3 & 4 will follow the Cessation of Coal Combustion (COCC) pathway as submitted in the COCC NOPP on April 28, 2023.

If you have any questions relative to this submittal, please contact Marcela Orlandea at (248) 207-7768 or via e-mail at marcela.orlandea@dteenergy.com.

Sincerely,

A handwritten signature in dark ink, appearing to read "Daniel Casey", with a long horizontal flourish extending to the right.

Daniel Casey
Plant Manager
Monroe Power Plant
Energy Supply - DTE Electric Company
734-384-2203
Enclosures

Cc: Alexandria Seeger - EGLE, Jackson District Office
Gerald Chilson, Jr - DTE EM&S, Monroe Power Plant
Christopher Paquette - DTE EM&S
Barry Marietta - DTE EM&S
Marcela Orlandea - DTE EM&S
Lisa Lockwood - DTE EM&S

Enclosure 1

Flue Gas Desulfurization Wastewater (FGD) Voluntary Incentive Program (VIP) 2023 Annual Progress Report

Facility Identification

Monroe Power Plant is located at 3500 East Front Street, Monroe, Michigan. MONPP consists of four B&W supercritical wall-fired boilers firing a blend of subbituminous coal, bituminous coal and petroleum coke and is rated for a maximum gross output of 3,280 MW. The units started commercial operation from 1971 to 1974. This flue gas desulfurization wastewater (FGD WW) NOPP annual progress report applies to all operational units at MONPP for both the VIP NOPP and the COCC NOPP.

Technology Projected to be Utilized for VIP Compliance

DTE has evaluated a suite of technologies for FGD WW treatment that would qualify for VIP compliance. These technologies included but were not limited to membrane treatment, thermal reduction (such as crystallization), encapsulation, and spray dryer evaporators.

In 2022, DTE selected spray dryer evaporators as the primary option to comply with VIP technology requirements for Units 1 and 2. A waste heat or bypass spray dryer is another form of an evaporative solution that can process the FGD wastewater and achieve 2020 Rule VIP compliance limits. The bypass spray dryer takes a small portion of the flue gas and routes it around the air preheater to a spray dryer vessel where the FGD WW is injected. The heat from the flue gas evaporates the wastewater leaving behind residual solids and fly ash from the flue gas. These solids are captured in the existing particulate collection device or a small fabric filter and landfilled. All the FGD wastewater is converted into a solid that is landfilled, eliminating any need to discharge FGD WW and achieving 2020 Rule VIP compliance.

DTE's IRP was filed in November of 2022 and received Commission approval on July 26, 2023, which included the future operation of Belle River Power Plant and Monroe Power Plant. The IRP moves up the retirement date for MONPP Units 1 and 2 to 2032 from 2035. This commitment to retire 3 years earlier prompted DTE to reevaluate its VIP technology compliance options in order to provide a more economical solution for our customers. DTE is currently evaluating a suite of options that include lower cost technology options and changes in operation that will achieve VIP technology compliance standards.

Engineering Dependency Charts

Enclosure 2 includes a schedule that shows the amount of time required for the installation of a VIP technology for FGD WW treatment system that is capable of achieving compliance with the revised 2020 Rule, such as spray dryer evaporators at Monroe Power Plant Units 1 and 2.

The draft schedule in Enclosure 1a allows appropriate project execution time to implement a VIP technology that would meet the VIP limits. DTE must progress through a preliminary design phase to develop an overall cost estimate. Once the preliminary design phase is completed, the development of cost estimates required to establish overall project cost and obtain approvals by DTE leadership to move into the final design phase of project

development can begin. Following final cost estimate, detailed engineering can begin with finalization of the project design basis and overall scope of work.

Updates to Initial NOPP

The information presented in this annual progress report represents the best information available to meet the contents of the annual progress report as specified in 40 CFR 423.19(h)(4). DTE has identified the following factors that could result in modifications of information submitted in this NOPP annual progress report:

1. Other Regulatory Filings – The approved 2022 IRP, Case number U-21193, provides a plan in which DTE will provide affordable and reliable electricity to its customers. However, many of the projects that will be required to achieve compliance with the 2020 Rule will need to be approved within other future DTE regulatory filings, including electric rate cases. The outcome of future regulatory matters regarding future projects may result in additional modifications to the initial NOPP.
2. Regulatory Changes / Rule Modifications – On August 3, 2021, EPA initiated a new rulemaking to revise the 2020 Rule for certain wastewater discharge limits. The proposed rulemaking or other potential future regulatory changes could impact DTE's ELG compliance strategy including the use of the VIP compliance subcategory and associated NOPP process.
3. Other Factors to Be Determined – Other factors including, but not limited to, legal challenges of EPA's ELG rules or rulemakings conducted by future federal administrations.

DTE will continue to comply with the initial Notice of Planned Participation for Units 1 and 2 at Monroe Power Plant as submitted on October 13, 2021.

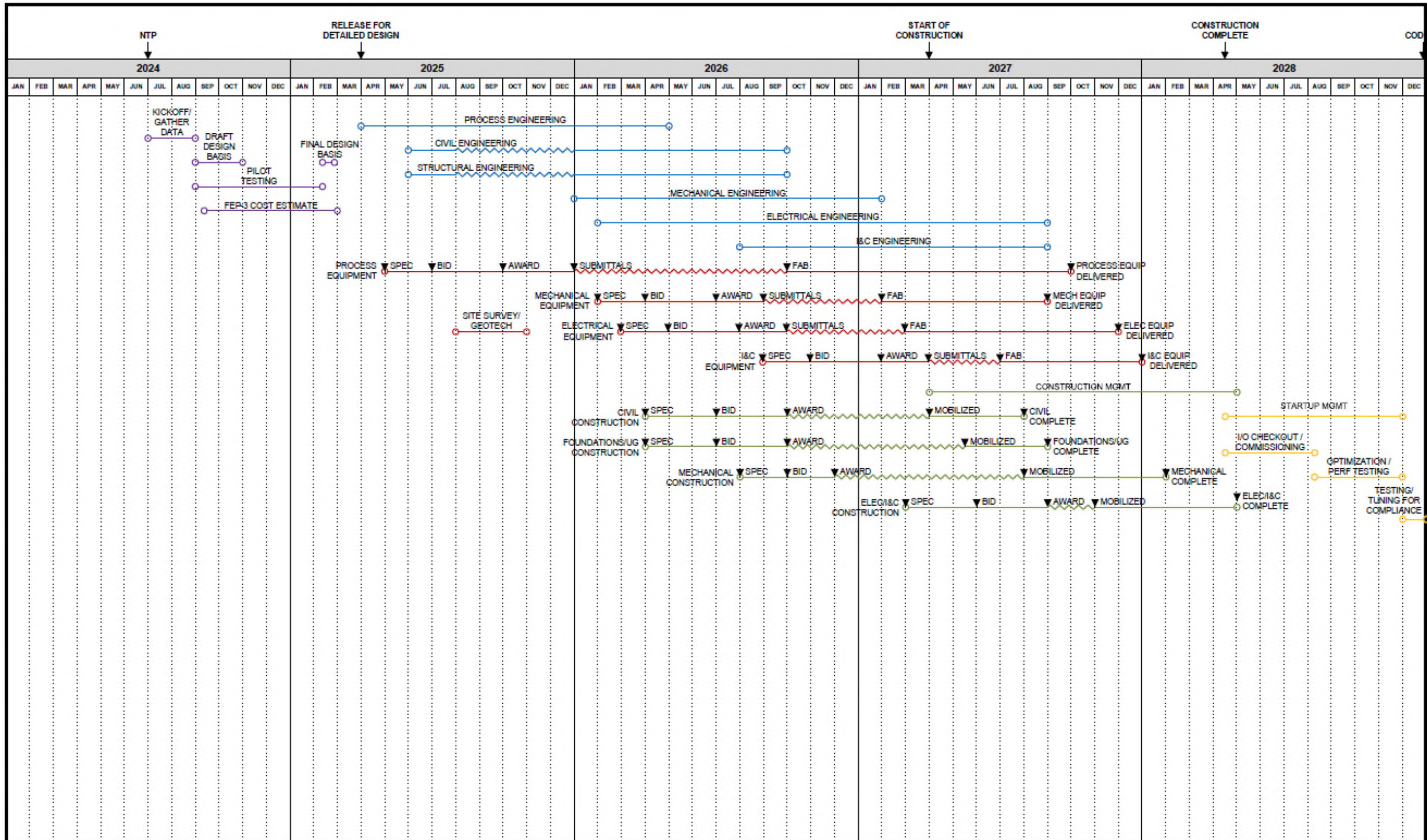
DTE has selected to comply with the cessation of coal combustion NOPP submitted in April 2023 for Monroe Power Plant Units 3 and 4. This update serves as notification that DTE has elected to transfer to the cessation of coal combustion pathway for MONPP Units 3 and 4 for FGD Wastewater Treatment discharge as described in 40 CFR 423.13(g)(2)(i). See Enclosure 2 for more details related to COCC NOPP annual update.

During 2024, DTE will proceed with activities necessary to obtain a cost estimate, as well as continue to develop the scope and feasibility of any necessary pilot testing of a selected VIP technology.

Enclosure 1a

VIP Implementation Schedule

The overall schedule follows a traditional general / multiple contractor approach. Following completion of the cost estimate, detailed engineering can begin with finalization of the project design basis and overall scope of work. A site survey and geotechnical report are developed for the project and the design basis is updated with this additional information. Procurement packages are developed for long lead equipment and the major process equipment. Submittal drawings and information are needed from the major process equipment for the balance of the detailed engineering activities to commence. The engineering deliverables involve development of process flow diagrams, piping & instrumentation diagrams, general arrangement drawings, one-line diagrams, lists, 3D models, isometric drawings, cable schedules, control narratives, etc. Procurement packages are developed for other balance of plant commodities. Major procurement activities include development of technical specifications, issuing packages to bid, evaluating bids received, negotiating and awarding contracts, receipt of submittals, review of submittal information, release of manufacturing to fabricate, fabrication of equipment / components, and delivery to site.



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DTE MONROE – NOPP VIP COMPLIANCE
TIMESCALE SUMMARY SCHEDULE

LEGEND	
	ACTIVITY
	FLOAT / CONTINGENCY
	PRELIM DESIGN
	DETAILED DESIGN
	EQUIPMENT
	CONSTRUCTION
	COMMISSIONING

By:	Date:	Project No:
D. RECKREY	10/13/2021	133899
Dwg No:	133899-L1SCHED	

Enclosure 2

Cessation of Coal – 2023 Annual Progress Report Content Requirements

Facility Identification

Monroe Power Plant (MONPP) is located at 3500 East Front Street, Monroe, Michigan. MONPP consists of four B&W supercritical wall-fired boilers firing a blend of subbituminous coal, bituminous coal and petroleum coke rated for a maximum gross output of 3,280 MW. The units started commercial operation from 1971 to 1974. This section of the annual progress report to cease coal burning generation activities by December 31, 2028 applies to Units 3 and 4 at MONPP.

Expected Date of Coal Cessation

Since the release of the 2023 Direct to Final Rule, DTE has evaluated the feasibility of coal cessation on Units 3 and 4 at MONPP. DTE submits this 2023 Annual Progress Report maintaining the commitment to cease burning coal at MONPP Units 3 and 4 by December 31, 2028.

Method for Cessation of Coal Burning Activities

DTE's current Integrated Resource Plan (IRP) was approved on July 26, 2023 and included a planned retirement for MONPP Units 3 and 4 by December 31, 2028. The 2020 Rule details that the cessation of coal could occur by either unit retirement or repowering to another fuel source. The option to retire generation units is the option DTE has considered for two of the MONPP units.

Regulatory Approval of Coal Cessation

The NOPP submitted in April 2023 represents the first formal submittal to a regulatory body regarding DTE's intentions to meet the 2020 Rule's cessation of coal compliance subcategory. In the preamble of the 2020 Rule, EPA acknowledges that a company may submit a cessation of coal NOPP and may not receive regulatory approval of those actions until a later date.

DTE's IRP was approved by the Michigan Public Service Commission (MPSC) on July 26, 2023 and qualifies as the regulatory approval identified by the 2020 Rule for the cessation of coal compliance subcategory.

Supporting Documentation of Coal Cessation Commitment

This 2023 Annual Progress Report documents DTE's commitment regarding its intentions to utilize the 2020 Rule's cessation of coal compliance subcategory. The finalized IRP settlement can be found on the Michigan Public Service Commission (MPSC) website under [Filing: U-21193-0527 \(site.com\)](https://www.mpsc.state.mi.us/filing/U-21193-0527/site.com). Any future regulatory filings, if and when they become available, may be provided as additional documentation in support to achieve compliance with ELG requirements.

Timeline for Achieving Coal Cessation

Monroe Units 3 and 4 are expected to cease operation of coal burning activities by December 31, 2028.

Risks/ Milestone Delays

The information presented in this annual progress report represents the best information available to meet the requirements of NPDES Permit MI0001848 I.A.15.a. DTE has identified the following factors that could result in modifications of information submitted in this NOPP:

1. Regulatory Changes / Rule Modifications – On July 26, 2021, the EPA announced that it will initiate a new rulemaking to revise the 2020 ELG Rule for certain wastewater discharge limits.
2. Other Factors to Be Determined – Other factors include long lead material construction and delivery delays, outage schedule changes as well as legal challenges of EPA's ELG rules or rulemakings conducted by future federal administrations.