



Department of Energy
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

JUN 30 2010

MEMORANDUM FOR CLARA BARLEY, GC-71, WASHINGTON, DC

FROM:

TIMOTHY J. MEEKS
ADMINISTRATOR

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SUBJECT:

Publication of Notice in the *Federal Register*

Please arrange for the publication of the attached Record of Decision for the Deer Creek Station Energy Facility Project in the *Federal Register*.

If you have any questions, please contact Shellie Scott at (202) 586-5581.

Attachment

cc:

Director of NEPA Policy and Compliance, GC-54, Washington, DC
Assistant General Counsel for Environment, GC-51, Washington, DC
Assistant General Counsel for Legislative and Regulatory Law, GC-71, Washington, DC
(w/copy of attachment)

APPROVED AS TO LEGAL SUFFICIENCY

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Liova D. Juárez
General Counsel

DEPARTMENT OF ENERGY

Western Area Power Administration

Deer Creek Station Energy Facility Project (DOE/EIS-0415)

AGENCY: Western Area Power Administration, DOE.

ACTION: Notice of Record of Decision and Floodplain Statement of Findings.

SUMMARY: The Western Area Power Administration (Western) received a request from Basin Electric Power Cooperative (Basin Electric) to interconnect its proposed Deer Creek Station Energy Facility Project (Project) to Western's transmission system. Basin Electric's Project includes the construction of a new 300-megawatt (MW) natural gas-fired combined-cycle generation facility in Brookings County, South Dakota, approximately 13.2 miles of new natural gas supply pipeline, a 0.75-mile transmission line, two water wells, a 1.25-mile water supply line, and 1 mile of local road improvements.

Western considered the interconnection request under the provisions of its Open Access Transmission Service Tariff (Tariff), along with the information in the environmental impact statement (EIS) and all comments received, and has made the decision to allow Basin Electric's request to interconnect at Western's existing White Substation. The U.S. Department of Agriculture, Rural Utilities Service (RUS), also received a request from Basin Electric for financial assistance for the Deer Creek Station Energy Facility Project. RUS is a cooperating agency in the EIS process.

FOR FURTHER INFORMATION CONTACT: Please contact Mr. Matt Marsh, National Environmental Policy Act (NEPA) Document Manager, Western Area Power

Administration, P.O. Box 35800, Billings, MT 59107; telephone (406) 247-7385 or e-mail DeerCreekStationEIS@wapa.gov for additional information concerning the Project. For general information on the Department of Energy's (DOE) NEPA review process, please contact Ms. Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance, GC-54, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585; telephone (800) 472-2756.

SUPPLEMENTARY INFORMATION: Western is a Federal agency within the DOE that markets and transmits wholesale electrical power through an integrated 17,000-mile, high-voltage transmission system across 15 western states. Western received a request from Basin Electric to interconnect their proposed Project to Western's transmission system. Basin Electric's Project is located within Western's Upper Great Plains Region, which operates and maintains nearly 100 substations and nearly 7,800 miles of Federal transmission lines in Minnesota, South Dakota, North Dakota, Montana, Nebraska, and Iowa.

Western published a Notice of Intent to prepare an EIS for the project on February 6, 2009 (74 FR 6284). A Notice of Availability of the Draft EIS was published by the Environmental Protection Agency (EPA) on February 5, 2010 (75 FR 6026), and a Notice of Availability of the Final EIS was published by EPA on May 28, 2010 (75 FR 30022).

Western's Purpose and Need

Western's need for action is triggered by Basin Electric's interconnection request. Western's Tariff describes the conditions necessary for access to its transmission system. Western provides an interconnection if there is available capacity on the transmission

system, while considering transmission system reliability and power delivery to existing customers, and the applicant's objectives.

Western's Proposed Action

Western's Federal involvement is limited to consideration of Basin Electric's interconnection request for their Project, under the provisions of the Tariff. Western's Proposed Action is to interconnect the Project to Western's transmission system. This involves adding a transformer bay to the White Substation and making other minor system modifications within the substation.

Applicant's Purpose and Need

Basin Electric's 2007 Power Supply Analysis (PSA) indicated that additional intermediate capacity would be needed by mid-2012 to meet its members' growing energy demand. Based on the PSA, a 700- to 800-megawatt (MW) capacity deficit is projected in the eastern portion of Basin Electric's service area by the year 2014. Basin Electric is proposing to meet this increased demand by implementing a resource expansion plan that includes 200 MW of peaking generation, 300 MW of wind generation, 250 MW of intermediate generation, and 600 MW of baseload generation.

Applicant's Proposed Project

As an intermediate capacity unit, Basin Electric's proposed Project would be cycled at low load periods, such as evenings and weekends. The unit would be capable of rapidly responding to load swings of the system. The Project has been sized for 300 MW in order to meet the 250-MW intermediate power supply need and have a 50-MW reserve to meet peak intermediate needs. The advantage of siting such a project in Brookings County is that wind generation on the grid in this area can be integrated with the

combined-cycle natural gas generation. During periods of high wind generation, gas-fired generation can be reduced. During periods of low wind generation, the gas-fired generation will be available to back up the wind generation.

The Project would use combined-cycle technology, in which a gas turbine powers an electric generator. Under the combined-cycle configuration, the exhaust from the combustion turbine generator passes through a heat recovery steam generator that extracts heat from the turbine exhaust. The waste heat is used to generate steam that then passes through a steam turbine generator.

Alternatives Considered

The EIS reviewed the options considered by Basin Electric in its PSA. Western has no decision-making authority over these options. Western's Federal involvement is limited to the determination of whether to allow the interconnection of Basin Electric's Project. For the purposes of furthering environmental decision making, the EIS evaluated three alternatives. Under the No Action Alternative, Western would not execute an interconnection agreement with Basin Electric. Given the lack of a Western interconnection, Basin Electric could not construct its Project as proposed. However, as Basin Electric is a regulated utility having load growth responsibility, it is reasonable to expect that it would construct a similar generation facility somewhere in eastern South Dakota. Such a facility may not connect to a Federal transmission system, involve Federal financing, or have any other Federal nexus that would require a NEPA process.

Under the Proposed Action, Western would execute an interconnection agreement. Basin Electric would construct a 300-MW combined-cycle combustion turbine natural gas generating facility and supporting infrastructure at one of two alternative sites in

eastern South Dakota. The EIS analyzed the two alternative sites as White Site 1 and White Site 2. The sites were selected because of their proximity to a natural gas supply, to a Western transmission line, to a water supply, and constructability.

White Site 1 is located approximately six miles southeast of White, South Dakota, in the northeast quarter of Section 25, Township 111 North, Range 48 West, of the Fifth Principal Meridian, Brookings County. The footprint of the White Site 1 power generation facility would take up 40 acres of a 100-acre site. To provide natural gas, a 13.2-mile natural gas line would be constructed from the site to access the Northern Border Pipeline in Deuel County, South Dakota. Electricity generated by the facility would be transmitted to Western's White Substation by a 0.75-mile long, 345-kV transmission line. Cooling water would be provided by two wells located near Deer Creek, and the water would be transmitted to the site by a 1.25-mile water pipeline.

White Site 2 is located approximately four miles east-northeast of White, South Dakota, in the northwest quarter of Section 2, Township 111 North, Range 48 West, of the Fifth Principal Meridian, Brookings County. In addition to a 40-acre generation facility footprint, White Site 2 would also involve substation construction that would occupy an additional six acres. To provide natural gas, a 10-mile natural gas pipeline would be constructed from the site to access the Northern Border Pipeline in Deuel County. Electricity generated by the facility would be transmitted from the new substation to a Western transmission line located 0.5 miles from the site. Cooling water would be provided by municipal water supply. A water line extension of one mile would be constructed to the site.

White Site 1 is convenient to the White Substation, is further away from occupied residences, and has better drainage than White Site 2. White Site 2 would require construction of a substation for interconnection. As a result, Basin Electric selected White Site 1 as its preferred site.

Environmentally Preferred Alternative

As required by 40 CFR 1505.2(b), Western has identified an environmentally preferred alternative: the No Action Alternative. Under this alternative, Western would deny the interconnection request and not modify its transmission system to interconnect the Project with its transmission system. Under this alternative it is assumed that Basin Electric's proposed Project would not be built and associated environmental impacts would not occur. However, Western must respond to Basin Electric's interconnection request under the terms of the Tariff. The Tariff and underlying Federal Energy Regulatory Commission Orders mandating open access to transmission systems establish conditions under which interconnection requests must be considered, including a NEPA review.

Under the No Action Alternative, Basin Electric's purpose and need would not be met. Basin Electric, as a regulated utility with load growth responsibility, would have to find an alternate means to meet the increase in intermediate generation demand for electric power in the eastern portion of its service area. It is reasonable to expect that Basin Electric would construct a similar generation facility somewhere in eastern South Dakota that may or may not have a Federal nexus requiring NEPA review and consideration of mitigation efforts as a part of that review.

Environmental Impacts

The analysis in the EIS demonstrated that Basin Electric's Project would have no impacts or minimal impacts on geology, farmland, environmental justice, recreation, visual, and cultural resources. Expected impacts on other environmental resources are discussed below.

Air emissions from the Project would be those expected from a modern natural gas-fueled power plant, and would be less than applicable emissions standards for carbon monoxide (CO), nitrogen oxides (NO_x), and particulates less than 10 microns in diameter (PM₁₀). The facility would also not be a major source of hazardous air pollutants, and construction-related emissions and transportation-related emissions would be minor. Greenhouse gas emissions from operation of the Project would be approximately one million metric tons of carbon dioxide (CO₂) equivalents per year. To put these greenhouse gas emissions in perspective, if 300 MW of energy were to be produced using a traditional subcritical pulverized coal boiler, the emissions of CO₂ equivalents would increase almost 4-fold, up to a projected 3.8 million metric tons. In addition, the Project is being constructed to complement renewable generation in the area, specifically wind energy generation, which would further facilitate reduction in overall greenhouse gas emissions. Electricity from this source would normally be generated on an intermittent basis when wind energy is not available.

Water resources concerns are related to erosion and sedimentation, and groundwater. Crossings of streams and wetlands by gas pipelines and waterlines have been minimized to the extent practicable by careful routing. Where crossings are unavoidable, construction would meet all permit conditions of the U.S. Army Corps of Engineers and

State water quality agencies. The impacts to streams and wetlands from the Project would be temporary in nature, and were determined to be not significant. Construction-site storm-water management would also meet all State and Federal regulations. Groundwater for plant cooling water would be pumped from the Big Sioux aquifer in the Deer Creek floodplain near the Project site. Initial pump tests indicate that Deer Creek would not be affected by drawdown. Biological resources concerns in this mostly agricultural area are mostly related to small crossings of native prairie by the gas pipeline corridor. Two locations contain native prairie forb and warm season grass communities. These locations are potential habitat for the Dakota skipper, a candidate for listing under the Endangered Species Act. Impacts in these areas are expected to be temporary and the prairie would be restored following pipeline trenching.

Traffic and noise were also identified as potential impacts. While the local road network provides adequate capacity to meet projected traffic demands, access to the site would be on unpaved county and township roads. Peak traffic is estimated at 360 one-way trips to the site. Maximum noise levels are projected to increase, but not significantly over background levels. Noise levels would be below U.S. Housing and Urban Development guidelines.

Public Involvement

A Notice of Intent (NOI) describing the proposed action was published in the Federal Register on February 6, 2009 (74 FR 6284). The NOI announced the intent to prepare an EIS on the Project, described the proposal, provided scoping meeting locations and dates, started a 30-day comment period, and provided contacts for further information about the Project and for submitting scoping comments. The public scoping meeting was held at

White, South Dakota, on February 24, 2009. A total of 12 written comments from agencies and two written comments from individuals were received in response to the NOI. Western responded to these comments in the Draft EIS.

A Notice of Availability of the Draft EIS was published by the EPA in the Federal Register on February 5, 2010 (75 FR 6026). A public hearing to receive comments on the Draft EIS was held in White, South Dakota on February 25, 2010. While eighteen people attended the public hearing, none wished to comment for the record, and no comments on the Draft EIS were received from the public during the public comment period. Western received comments on the Draft EIS from a number of Federal and State agencies. The U.S. Environmental Protection Agency (EPA) indicated that the document adequately disclosed the environmental impacts of the alternatives and no further data collection is necessary and identified opportunities for additional mitigation. While the U.S. Department of the Interior indicated that they had no comments, the U.S. Fish and Wildlife Service (USFWS) concurred that the Project will not adversely affect federally-listed endangered and threatened species. In addition, the South Dakota Department of Game, Fish and Parks (SDGFP) provided technical corrections to the treatment of state-listed species and their distribution.

Because no substantive changes were needed to the Draft EIS, Western did not republish the Draft EIS but instead issued the comments, responses, and changes to the document, with a new cover sheet, as the Final EIS pursuant to 40 CFR part 1503.4(c). The complete Final EIS is composed of both the Draft EIS and the responses to comments found in the Final EIS. The mitigation measures for air quality recommended by the EPA in their comments on the Draft EIS have been adopted. The EPA provided

comments on the Final EIS with concerns about groundwater withdrawal and monitoring. Additional details about groundwater issues are presented in the *Groundwater Mitigation* section below.

Mitigation Measures

Through public and agency participation in the NEPA process, Basin Electric has altered the design of the Project to minimize impacts to the environment. Best Management Practices will be used for sediment and erosion control, as described in a Project-specific Storm Water Pollution Prevention Plan, Spill Prevention Control and Countermeasure Plan, South Dakota Department of Environment and Natural Resources (SDDENR) General Permit for Storm Water Discharges with Industrial Activities, and SDDENR General Permit for Storm Water Discharges from Construction Activities. Other Project specific mitigation measures are identified in the Draft EIS document for each resource category and in the Final EIS response to comments. Basin Electric's Standard Mitigation Measures for the Project are listed in Appendix F of the Draft EIS. Project-specific mitigation measures, to be implemented as conditions of this decision, are listed below.

Air Quality Mitigation

A dust control plan will be implemented for use of unpaved county and township roads in the plant vicinity. The air permit is expected to be issued in summer 2010. The draft permit establishes limits for NO_x, CO, PM₁₀, total sulfur content for natural gas and fuel oil to be used, opacity levels, and start up and shut down operations. Basin Electric will comply with all conditions and limits in the final air permit.

Groundwater Mitigation

The 2 groundwater production wells will be located approximately 275 feet from Deer Creek. Based on the typical hydraulic characteristics of the Big Sioux aquifer the cone of influence around the production wells would be 21 to 112 feet at a pumping rate of 125 gallons per minute. Only one production well will be in service at any given time. A minimum buffer of 163 feet between the edge of the cone of influence and Deer Creek will thus be preserved. Two pumping tests will determine the actual extent of the cone of influence, which is expected to fall within the range identified above. Pumping tests will be performed during the initial pumping of the first production well and during the period of maximum withdrawal at Project start-up to fill the on-site water storage tank. Monitoring will take place at least every hour during these testing periods. Two groundwater monitoring wells would be left in place between the two production wells and Deer Creek. Given the existing data and buffer between the production well and Deer Creek, no impacts to Deer Creek are anticipated. If the cone of influence is larger than anticipated, Basin Electric will reassess the potential for impacts to Deer Creek in conjunction with Western.

Wetlands Impact Avoidance and Mitigation

The Project site, gas pipeline, transmission line and water line have the potential to impact wetlands. The Project area contains pothole wetlands, wetland swales (some of which are cultivated) and creeks. Construction in wetlands will be avoided to the extent practicable. Where impacts to wetlands are unavoidable, construction will be performed so that any impacts are minimized. Wetland areas are very common in the Project area, so complete avoidance is not possible.

Construction of Basin Electric's Project would impact 8.74 acres of wetlands along the natural gas pipeline and water pipeline alignments. In addition, construction of the access road into the power generation facility would permanently impact 0.02 acre of wetlands, and temporarily impact an additional 0.02 acre. All of the Project impacts will occur to drainage wetlands classified as riverine, according to the Natural Resources Conservation Service Hydrogeomorphic Classification System for wetlands. Similar wetland areas in the Project area are often cultivated when located in cropland, especially in dry years.

The following water body crossing procedures will be used. Hazardous and regulated materials, chemicals, fuels, and lubricating oils would not be stored and concrete coating activities would not be performed within 100 feet of any intermittent creek or other water body. All construction equipment would be refueled at least 100 feet from any water body. All spoil from creek crossings would be placed in the construction right-of-way (ROW) at least 10 feet from the water's edge, if present. Sediment barriers would be used to prevent the flow of spoil material into the water body. Where possible and practical, any large wetlands and perennial streams will be horizontally directional drilled (HDD). Drilling equipment and bell holes (entrance and exit pits) will be placed at least 25 feet away from the edge of any waterways and wetlands. Soil excavated from the bell holes will be backfilled and stabilized. Where HDD is not used, trenching will be accomplished by minimizing the extent of construction equipment usage in wetland areas and limiting equipment travel and use to the existing ROW. Equipment crossing of wetlands will be completed through use of timber mats if rutting in excess of four inches occurs. Impermeable material such as clay rich soils or sand bag trench blocks will be

placed as soil block within the ditch at the entry and exit points of each individual wetland complex so as to minimize the potential of inadvertent drainage of the wetland area.

The following is a general list of procedures to be utilized to reduce wetland impact in areas where open-cut trench crossings in wetland areas will occur. The duration of construction-related disturbance within wetlands will be minimized by means of timely construction during the historically dry periods of the year, typically in the fall. If standing water or saturated soils are present, low ground-weight construction equipment will be used or normal equipment would be operated on timber riprap, prefabricated equipment mats, or geotextile fabric overlain with gravel. Geotextile fabric used for this purpose will be strong enough to allow removal of all gravel and fabric from the wetland. The top 12 inches of topsoil will be segregated from the area disturbed by trenching, except in areas where standing water or saturated soils are present. Once the trench has been backfilled, the segregated topsoil will be used to cover the trench. Impermeable material such as clay rich soils or sandbags will be placed as trench blocks at the entry and exit points of each individual wetland complex to minimize the potential of inadvertent drainage of the wetland area.

Temporary sediment barriers will be used to stop or reduce the flow of sediment coming into wetland locations. These barriers will be constructed of materials such as silt fence, staked hay or straw bales, or sand bags depending on conditions present and the most effective barrier for those conditions. Temporary sediment barriers will be installed as necessary at the base of slopes until disturbed vegetation has been reestablished.

During pipeline installation, the welding of a pipe string will be done at the edge of the wetland and the completed section will be pulled or pushed across (or under, if HDD is used) the wetland and tied into the rest of the pipeline. During wetland disturbance, erosion control structures will be placed as necessary to prevent flow of soil from spoil piles into undisturbed wetland areas. If the wetland has a vegetative mat that can be saved in large segments, the mat will be saved for replacement over the backfilled trench to help re-establish vegetation more rapidly. Once construction has been completed, wetland areas will be restored by grading, which will return the area's drainage patterns to pre-construction contours. Excess backfill will be disposed of on dry land in the ROW rather than on wetland areas. Excess backfill will not be placed on any wetland or floodplain area.

Restoration will be undertaken for temporary impacts to jurisdictional wetlands. Mitigation measures for temporary impacts may include placement of a horizontal marker (e.g., fabric, certified weed-free straw, etc.) to delineate the existing ground elevation of wetlands that would be temporarily filled during construction. Following construction, mitigation measures will include removal of temporary fill, recontouring to the original site elevations, and then reseeding using native plant species to reestablish a prevalence of hydrophytic vegetation. Revegetation protocols typically will make use of plant species currently growing in the affected wetlands.

Biological Mitigation

SDGFP will be consulted if any active raptor nests were discovered within 0.25 miles of any of the Project facilities during construction. To ensure that impacts to the Dakota skipper are avoided, pipeline construction will not take place in the two locations of

Dakota skipper suitable habitat during the growth and blooming period for the nectar source of the adult butterfly (May-July), which includes the summer breeding period of the butterfly. Nesting bird surveys will be completed prior to ground disturbance activities in accordance with protocols developed in consultation with Western and the USFWS. The seed mix and specifications for native plantings in disturbed area will be developed by Basin Electric, based on the NRCS-recommended seed mixes.

Traffic and Roadway Mitigation

Traffic signage changes and intersection improvements will be implemented to manage the temporary increase in traffic volumes and loads during construction and for deliveries that will occur during Project operations.

Noise Mitigation

Basin Electric will conduct a post-construction operational noise assessment to be completed by an independent third-party noise consultant, approved by the South Dakota Public Utilities Commission, to show compliance with the noise levels according to the predictive model used in the noise analysis. The noise assessment will be performed in accordance with American National Standards Institute (ANSI) B133.8 – Gas Turbine Installation Sound Emissions. The results of that analysis will be evaluated by Basin Electric to determine if any modifications to the proposed facilities or operations are needed.

Consultation

Western is the lead Federal agency for compliance with Section 106 of the National Historic Preservation Act. By letter of May 10, 2010, the South Dakota State Historic Preservation Officer concurred that no historic properties would be affected by the

Project. RUS is the lead Federal agency for compliance with Section 7 of the Endangered Species Act. A biological assessment was prepared and submitted with a determination that the Project may effect, but would not likely adversely affect listed species. As stated above, the USFWS concurred with this determination.

Floodplain Statement of Findings

In accordance with 10 CFR part 1022, Western considered the potential impacts of the Project on floodplains and wetlands. The natural gas pipeline for Basin Electric's Project would cross 100-year floodplains in eight places. There are no pipeline routes that would completely avoid floodplains, given the locations that existing pipelines would need to be tapped and drainage patterns in the region. As a result, there is no practicable alternative to construction of a natural gas pipeline in floodplains. In addition, the wells producing cooling water would be located in the floodplain of Deer Creek. Total impacts to the floodplain from the well facilities would be an approximately 200-foot by 200-foot area for two individual wellheads, a monitoring well, and an 8-by-10 foot control building. The access road, wells, and control building would be contoured to an elevation of one foot above the 100-year flood elevation. Consistent with the requirements of the National Flood Insurance Program, the building would be watertight and utilities would be capable of resisting flood damage. Because all other available water well supply sites are located in the Deer Creek floodplain, there is no practicable alternative to locating this site within the floodplain.

Permanent impacts to wetlands of 0.02 acres would occur on the Project site due to construction of facilities. Temporary impacts to wetlands would occur due to construction of the proposed Project facilities, including the Project site (0.02 acres),

water pipeline (5.86 acres), and natural gas pipeline (2.88 acres). Impacts have been minimized by changing the site layout, use of HDD, and by construction of facilities adjacent to existing linear features such as county and township roads. Where unavoidable, impacts are minimized by use of pads for heavy equipment and restoration to preconstruction contours. There are no pipeline routes that completely avoid wetlands, given the locations that existing pipelines would need to be tapped and the constraints of the Project site. As a result, there is no practicable alternative to construction in wetlands. Project facilities in the floodplain would not impound or impede drainage of flood flows, or increase the severity of or damage from any flood flows.

Decision

Western's decision is to allow Basin Electric's request for interconnection at the White Substation in South Dakota and to complete modifications to the substation to support the interconnection.¹ Western's decision to grant this interconnection request satisfies the agency's statutory mission and Basin Electric's objectives while minimizing harm to the environment. An interconnection agreement will be executed in accordance with Western's Tariff.

Basin Electric has committed to minimize its proposed Project's impact on the environment through the Project's design, the use of pollution control technology, and the implementation of mitigation measures as incorporated in the Project description and summarized above. Western will adhere to its own standard mitigation measures for all modifications within White Substation. Western conditions its approval of Basin

¹ Western's authority to issue a record of decision for integrating transmission facilities is pursuant to authority delegated on October 4, 1999, from the Assistant Secretary for Environment, Safety and Health to Western's Administrator.

Electric's request to interconnect to Western's transmission system upon the adoption and implementation of the mitigation measures as described in the Final EIS.

This decision is based on the information contained in the Deer Creek Station Energy Facility Project Final EIS (DOE/EIS-0415). The EIS and this ROD were prepared pursuant to the requirements of the Council on Environmental Quality Regulations for Implementing NEPA (40 CFR parts 1500-1508), DOE Procedures for Implementing NEPA (10 CFR part 1021), and DOE's Floodplain/Wetland Review Requirements (10 CFR 1022). Full implementation of this decision is contingent upon the Project obtaining all applicable permits and approvals.

Dated: **JUN 30 2010**

A handwritten signature in black ink, appearing to read 'T. J. Meeks', with a long, sweeping horizontal stroke extending to the right.

Timothy J. Meeks
Administrator