Timothy N. Kyper, PE
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(724) 771-0012

Education

BS Civil Engineering 1982,
Lehigh University

MS Civil Engineering 1985,
Lehigh University

Registrations/Certifications

Professional Engineer: PA, NC, OK, WV

Affiliations

American Society of Civil Engineers (ASCE), Member

Society of American Military Engineers (SAME), Fellow (Past President, Vice President, Board of Directors, and committee member – Pittsburgh Post)

American Society of Highway Engineers (ASHE), Member

Honors

Society of American Military Engineers, Pittsburgh Post Professional of the Year (2007)

Ohio Valley Region – Regional Vice President Award (2001 and 2005)

Summary

Civil Engineering experience in a multitude of industries for clients/owners across North America. Professional experience includes work on dozens of dams and other structures, such as bridges, culverts, and flood control levees, more than twenty solid waste landfills and impoundments, and numerous land development and linear projects (roadways and natural gas and electric transmission lines, including substations) in over twenty states. A recognized expert on hydrologic and hydraulic engineering issues involving dams, flooding, flood damages, and stormwater management, having provided testimony, written or verbal, in over 150 cases. Former adjunct instructor in the Civil and Environmental Engineering Department at Carnegie Mellon University.

Professional Experience – Representative Projects

Solid Waste Management/Site Development Engineering

Dominion Energy, Wise County, VA

Senior Engineering Manager for all engineering aspects and environmental permitting for a solid waste landfill to support Dominion's new fossil fuel power plant in Wise County, Virginia. Planning, conceptual, preliminary and final designs, engineer's estimates of probable construction costs, scheduling, budget analyses and projections, engineering drawing preparation, specifications, CQA plan development and CQA monitoring and reporting, mine subsidence investigation and mitigation design, hydrogeologic and geotechnical investigations, groundwater monitoring plan preparation, site grading (>10 million cubic yards earthwork), haul road design, bridge design, dam design, wetland investigations, waste characterization studies, assistance with Contractor bidding, and other necessary studies. Successfully obtained U.S. Army Corps of Engineers Section 404 permit, Wise County Solid Waste Permit, VDEQ Part A and Part B Permits, DCR Dam Safety Permits, and VPDES Permits.

Allegheny Energy (now First Energy) Harrison Power Station CCP Landfill Site, Shinnston, West Virginia

Project manager responsible for numerous studies, engineering designs, environmental permitting, and construction assistance. Work items included hydrogeologic, geologic, and geotechnical investigations, structural design, mine grouting for mine subsidence mitigation, hydrologic and hydraulic design, site grading, dam design, haul road design, waste characterization, wastewater treatment plant conceptual designs, engineer's cost estimates, plans and specifications, assistance with bidding, construction monitoring and construction certification. Successfully obtained all permits necessary for construction and operation of the landfill.

Engineering Manager responsible for the design and permitting in accordance with West Virginia Dam Safety Regulations for expansion of Sedimentation Pond No. 1, requiring hydrologic and hydraulic design, geotechnical investigations, structural design, plans and specifications, construction monitoring, and Emergency Action Plan (EAP) preparation.

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Wastewater treatment plant conceptual design project. Project Manager responsible for conceptual plan development, studies, cost estimating, and presentations.

Dominion Energy, Richmond, VA

Project Manager responsible for all engineering investigations and environmental permitting to change site operations from dredged to dry CCP placement within the Upper Ash Pond at Dominion's Chesterfield Power Station in Chesterfield, Virginia. Work included field observations, slope stability analyses, plans and specifications, CQA Plan preparation, environmental permitting, and regulatory agency coordination.

Chesterfield, Possum Point, Chesapeake, Mt. Storm, and North Branch power stations.

Engineering Manager responsible for a system-wide open-end civil, mechanical, and electrical engineering contract at all of Dominion's coal-fired generating stations, requiring field observations, geotechnical investigations, conceptual designs, preliminary and final designs and permitting, estimates of probable construction costs, construction drawings and specifications, construction monitoring and certifications.

Coal-Fired Electric Generating Stations in Pennsylvania - formerly Pennsylvania Electric Company

Project engineer responsible for residual waste compliance projects at six (6) coal-fired electric generating stations, requiring waste stream inventories, siting studies for new disposal facilities, conceptual designs, preliminary and final designs, and permit application preparation.

AEP Reiker Hill Road CCP landfill - Conesville Station, Muskegum County, Ohio

Project engineer for design and permitting for a new CCP Landfill. Work included field investigations, mine subsidence investigations, mine stabilization design, hydrogeologic and geologic studies, drawing and specification development, CQA plan preparation, solid waste permit application, engineer's estimates of probable construction costs, and regulatory agency coordination.

Water Resources Engineering/Dams

Pine Creek Flood Mitigation in Etna Borough, Allegheny County, Pennsylvania - Allegheny County Department of Economic Development.

Flood stage reduction project along Pine Creek requiring engineering studies to reduce the flood stage and make channel improvements for Pine Creek. Responsible for hydraulic studies, cost estimates, environmental permitting, and plans and specifications.

Hussey Copper Plant in Leetsdale, Pennsylvania - Hussey Copper, Ltd.

Water damage protection and remedial design project to evaluate water damage protection alternatives for an industrial facility located in the Ohio River floodplain. Project Manager responsible for interior drainage improvements at the 30-acre industrial site protected by a levee: conceptual studies, levee raising options, pump station upgrades, plans and specifications.

City of Petersburg, Grant County, WV - U.S. Army Corps of Engineers, Baltimore District.

Reconnaissance study requiring engineering analysis for flood protection for local community that incurred $18M in damages in a 400-year flood event. Project engineer responsible for field reconnaissance, river cross section surveying, computer modeling, cost estimating, and report writing.

City of Moorefield, WV - U.S. Army Corps of Engineers, Baltimore District.

Reconnaissance study project at the confluence of the South Branch and the South Fork of the South Branch of the Potomac River for a community that incurred $23M in damages in a 400-year flood. Responsible for assisting with calibrated hydraulic model development for existing conditions, evaluation of 12 flood protection plans for 50-, 100-, and 400-year floods, and protection plan cost estimates.

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Bradford Dam No. 3 - Bradford City Water Authority, McKean County, PA.

Project Engineer responsible for all hydrologic and hydraulic engineering and associated environmental permitting for the rehabilitation of Bradford Dam No. 3, Bradford City Water Authority.

Brookville Water Works Dam - Brookville Municipal Authority, Jefferson County, Pennsylvania.

Dam rehabilitation project to repair damages incurred by flood-induced overtopping of the dam. Responsible for hydrologic and hydraulic design and environmental permitting.

Two Lick Creek Dam for EME Homer City. Emergency Action Plan (EAP) preparation.

Project Manager responsible for hydrologic studies, DAMBRK analysis, inundation mapping, EAP preparation, and regulatory agency coordination.

Williamsburg Station Dam in Williamsburg, Pennsylvania for Pennsylvania Electric Company. Inundation study for a controlled dam failure.

Responsible for watershed modeling, river hydraulics, and inundation map preparation.

Monksville Dam in New Jersey for O'Brien & Gere Engineers, Inc.

Responsible for physical hydraulic model study for a proposed stepped spillway at Monksville Dam.

Power Delivery

American Electric Power

Wyoming/Jackson's Ferry Electric Transmission Line - Virginia and West Virginia

Engineering and environmental consulting project for planning, design, and construction of a proposed 90-mile, 765 kV transmission line. Compliance with all federal and state permitting requirements. Responsibilities included engineering and permitting for all stream crossings.

Group Manager/Engineering Manager (Geotechnical and Geosciences)

- Landslide Investigations and remedial Design – Cabin Creek, WV - Prestonsburg, KY
- Coal sterilization investigations relative to mining beneath transmission line structures and substations – WV and KY

PPL Electric Utilities - Pennsylvania

Project manager for ground improvement project to raise a transformer that had settled due to karst topography. Evaluation of Contractor proposals, recommendations to Owner for selection, and construction observations and documentation.

PSEG – New Jersey

Engineering Manager for third-party review of two (2) major electric transmission line projects, the Burlington Camden Conversion Project and the North Central Reliability Project. The items reviewed were:

1. Tubular Steel Poles
2. Existing Lattice Tower Steel Modifications
3. Tubular Steel Pole Foundations
4. Existing Lattice Tower Foundation Assessment and Reinforcing
5. Electrical Design
6. Conductor, OPGW and Shield wire
7. Structure Grounding
8. Construction Feasibility
9. Environmental Permitting

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Internal Program Manager at DiGioia Gray for all civil, geotechnical and structural engineering efforts to support substation engineering projects for American Electric Power and other electric utility clients.

Transportation

Mon/Fayette Expressway, Section 52J, South Park Township and Jefferson Borough, in Washington and Allegheny Counties for the Pennsylvania Turnpike Commission.

Highway and roadway design project for 1.7 miles of 4-lane limited access expressway, and 1.2 miles of local road with a multi-use trail. Awarded: 2002 ESWP Awards Distinction Transportation Category Project of the Year, 2002 ASHE Outstanding Highway Engineering Award, 2003 PTC Pennsylvania Partnership for Highway Quality Project Recognition Award Category. Responsible for hydrology and hydraulics technical oversight.

SR 0048, Sections A11 and A16, Mosside Boulevard in Allegheny County - Pennsylvania Department of Transportation, District 11-0.

Bridge and roadway design project to replace two bridges and approach roadway over Turtle Creek, Norfolk Southern Railroad, and a local service road. Responsible for technical review of all hydrologic and hydraulic engineering assessments, PennDOT H&H Report preparation, PA Chapter 105 permitting, and natural stream channel design.

County-Owned Bridges - McCandless and Forward Townships - Allegheny County Department of Public Works.

Bridge replacement project for two short span bridges with precast reinforced concrete box culverts and rehabilitation project for one simple-span bridge. Responsible for hydrologic and hydraulic studies and report preparation.

Jackson Mill Covered Bridge in Hanover Township, Pennsylvania for the Washington County Planning Commission.

Bridge inspection and restoration project for a 46'-long historic timber covered bridge. Responsible for hydrologic and hydraulic engineering technical review.

Sarvis Fork Covered Bridge - Jackson County for West Virginia DOT, Division of Highways.

Bridge inspection and rehabilitation project for a historic timber covered bridge. Responsible for hydrology and hydraulics technical review.

Fish Creek Covered Bridge - Wetzel County for West Virginia DOT, Division of Highways.

Bridge inspection and rehabilitation project for a historic 36' x 12'-10" covered bridge to maintain the historic integrity of the early-1880s wood structure and provide a traffic-bearing steel substructure. Responsible for hydrology and hydraulics technical review.

SR 0218 over Sheppards Run, Blacksville Bridge in Greene County, Pennsylvania for Consolidation Coal Company.

Roadway and structure design project for a precast-concrete box culvert. Responsible for hydraulic analysis.

Rockport Works in Rockport, Indiana for AK Steel.

Project Manager responsible for design of a 34,000'-long, 36"-diameter treated effluent pipeline. Responsible for hydraulic studies, plans and specifications, and construction monitoring.

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Miscellaneous

Webster Mine Ecosystem - Nanty Glo, PA - U.S. Army Corps of Engineers, Pittsburgh District.

Ecosystem restoration project to treat acid mine discharge and improve water quality in the Blacklick Creek drainage basin. Project Manager responsible for final design, including plans, specifications, and cost estimates.

Winfield Lock and Dam - Winfield, WV - U.S. Army Corps of Engineers, Huntington District.

As Project manager, responsible for construction monitoring services for a wetland mitigation pond at the Winfield Lock and Dam.

CCP Beneficial Use in the United States - Electric Power Research Institute (EPRI).

Assisted with the preparation and performance of research project to develop guidelines for use of advanced SO2 control by-products (fluidized bed combustion, spray dryer, and sodium, calcium, and furnace sorbent injection) as road base, structural fills, soil and sludge stabilization, grout, synthetic aggregates, cement production and replacement, and soil amendment. Responsible for questionnaire development, data collection and analyses, and report writing.

Coastal Engineering

Chesapeake Bay Shoreline Study, Baltimore County, Maryland c/o of Rodgers, Golden & Halpurn.

Comprehensive shoreline enhancement study of 185 miles of the Chesapeake Bay shoreline, Baltimore County Maryland. Assessed existing shoreline and shoreline structures; evaluated wind waves, boat wakes, currents, and sediment supply as related to shoreline erosion and identification of shoreline management and enhancement alternatives.

Lorain Small Boat Harbor and Edgewater Marina Breakwater in Lorain and Cleveland, Ohio and Lakefront Levee at Reno Beach Howard Farms, Ohio - U.S. Army Corps of Engineers, Buffalo District.

Design project for rubblemound breakwater with concrete walkways for fishermen, to replace a temporary rubber tire breakwater at Lorain; and a 15,000' lakefront levee rehabilitation at Reno Beach. Responsible for plans, specifications, and cost estimating for rehabilitating the rubblemound breakwaters at Edgewater; and rehabilitating the lakefront levee at Howard Farms.

Indian River Inlet in Delaware - U.S. Army Corps of Engineers, Philadelphia District.

Project engineer responsible for the engineering design and drawings, and specification preparation for a sand bypassing plant. The bypass system was designed to pass 200 cubic yards of sand per hour from the southern side of the inlet to the northern side to protect a major highway from additional shoreline erosion.

Crystal River Power Plant, Gulf of Mexico, - Florida Power Corporation.

Responsible for designing an experimental artificial reef and extension of an existing rubble dike three miles off shore from the power plant.

State Street Pier in Erie, Pennsylvania - Erie-Western Pennsylvania Port Authority.

Public dock rehabilitation project to provide supporting documentation for permit applications. Responsible for designing the pier rehabilitation, including developing a site-specific wave runup model and erosion protection.

Shoreline Study, Sea Bright, New Jersey - U.S. EPA and U.S. Army Corps of Engineers.

Responsible for investigating the impacts of sea level rise on the beaches and for developing shoreline protection measures.

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Clark Landfill, East Chicago, Indiana - International Steel Group, Indiana Harbor.

Landslide repair and closure design project to determine the cause of a .5M c.y. landslide in a 130'-high fill slope and to design the repair and closure of the 2M c.y. disposal area for residual wastes. Responsible for conceptual engineering study to mitigate extensive shoreline erosion and sedimentation at industrial water intake along Lake Michigan.

Other Site Development Engineering

Pottstown Landfill in Pottstown, Pennsylvania - Waste Management of PA, Inc.

Environmental compliance audit assessing compliance with Pennsylvania Municipal Solid Waste Management Regulations. As Project Manager, responsibilities for an audit of the landfill's operations and a proposed closure plan were to assess compliance with the Pennsylvania Municipal Solid Waste Management Regulations.

Norfolk Southern Coal Transportation System Corridor in Boone and Wyoming Counties, West Virginia - Norfolk Southern Corporation.

Environmental permitting project for a 4.5-mile-long coal conveyor system. Responsibilities included the coordination for the environmental permitting.

Development Sites in Pennsylvania for Oxford Development Company.

Site development engineering projects including a 13-acre parcel containing 144,000 square feet of retail space, and a 38-acre mixed use parcel, containing 500,000 square feet of retail and office space.

Development Site for Riverside Development Corporation.

Responsible for preliminary engineering, site plan approval, and erosion and sedimentation control approval. This site plan was for a 40-acre mixed-use development.

Publications

2000 Gray, T.A., Kyper, T.N., Smith, E. (USACE), Hedin, R. (Hedin Environmental) *Feasibility Study for Ecosystem Restoration by Remediation of the Webster Mine Discharge at Nanty Glo, PA* presented by Tom Gray at the U.S.D.O.E., NETL Facility, Morgantown, WV, 12:30 pm, October 4, 2000

1998 Bruhn, R.W.; Knott, D.L.; Sanger, D.B.; and Kyper T.N. *Effectively Designing for Potential Mine Subsidence at a Disposal Facility in Northern Appalachia*, in Land Subsidence - Case Studies and Current Research, proceedings of the Dr. Joseph F. Poland Symposium on Land Subsidence, ed. J. Borchers, USGS, AEG Special Publication No. 8, Star Publishing Co., 1998.

1997 T. A. Gray, T. N. Kyper, and J. L. Snodgrass *Disposal of Coal Combustion By-Products in Underground Coal Mines* to be printed in bi-monthly newsletter Energeia, published by the University of Kentucky, Center for Applied Energy Research. 1997

1995 Kyper, T.N., Snodgrass, J.L., and Gray, T.A. *Disposal of Coal Combustion By-Products in Underground Coal Mines*. In Proceedings of the 1995 International Ash Utilization Symposium. Lexington, Ky., October, 1995.

1995 *A Mitigation of Potential Subsidence Impacts at a Disposal Facility* by D.L. Knott, R.W. Bruhn, D.B. Sanger and T.N. Kyper and poster session to be given by Robert W. Bruhn at the Association of Engineering Geologists (AEG) 38th Annual Meeting, Groundwater Resources Association of California, October 5 and 6, 1995 at Sacramento, CA.

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1995 Gray, T.A., Perry, M.T., and Kyper, T.N. *Constraints to the Use of Coal Ash in Eastern Coal Mines*. In Proceedings of the 1995 Society of Mining Engineers Annual Meeting. Denver, Colo., March, 1995.

1993 Kyper, T. N., Brendel, G. F., and Golden, D. M. *Institutional Constraints to the Beneficial Use of Coal Fly Ash*. In Proceedings of the Tenth International Ash Use Symposium, Vol. 2, January 1993. (EPRI TR-101774)

1992 Brendel, G. F., and Kyper, T. N. Institutional Constraints to Coal Fly Ash Use in Construction. Palo Alto: Electric Power Research Institute, December 1992. (EPRI TR 101686)

1992 Kyper, T. N. *Institutional Constraints to the Use of Coal Fly Ash in Civil Engineering Construction*. In Proceedings of the 1992 American Society of Civil Engineers Convention, Session 2B, New York, September 13-17, 1992.

1985 Kyper, T. N., and Sorensen, R. M. *The Impact of Selected Sea Level Rise Scenarios on the Beach and Coastal Structures at Sea Bright, New Jersey*. In Coastal Zone '85, Orville, Magoon et al, eds. New York: American Society of Civil Engineers, Vol. 2., 1985.

1983 Weisman, R. N., and Kyper, T. N. *Physical Hydraulic Model of the Ohio River Near the Elmer Smith Generating Station Cooling Water Outfall*. Fritz Engineering Laboratory, Lehigh University, December 1983. (Report #200.83.773.1)