STEWART W. MCCOLLAM, PE
TECHNICAL DIRECTOR, AIR PRACTICE

CREDENTIALS

- Licensed Professional Engineer (Kentucky, South Carolina)
- M.E., Chemical Engineering, University of Louisville
- Graduate Environmental Engineering Certificate, University of Louisville
- B.S., Chemical Engineering, University of Louisville

PROFESSIONAL EXPERIENCE

- **2025-Present:** ALL4 LLC, Louisville, KY – Technical Director, Air Practice
- **2023-2024:** ALL4 LLC, Louisville, KY – Kentucky Office Leader
- **2020-2022:** ALL4 LLC, Louisville, KY – Technical Manager
- **2014-2020:** Smith Management Group, Louisville, KY – Environmental Engineer
- **2009-2014:** Louisville Metro Air Pollution Control District, Louisville, KY – Engineer I

TECHNICAL EXPERTISE

- ✓ New and modified source air permitting for local, state, & federal permitting programs;
- ✓ Minor, conditional major, synthetic minor, major NSR and Title V source permitting experience;
- ✓ Environmental litigation support including expert testimony;
- ✓ Environmental compliance program development, implementation, & management;
- ✓ Preparation of annual compliance certifications & emissions statements;
- ✓ Greenhouse gas inventory and reporting;
- ✓ EPCRA §312 Tier II and §313 TRI reporting;
- ✓ Compliance auditing;
- ✓ EH&S Technology Risk Assessments;
- ✓ Human health risk assessment evaluations;
- ✓ Case-by-case control technology economic and technical feasibility review;
- ✓ Air dispersion modeling studies to support air toxics, NSR, NNSR, PSD, SIP, and other air quality regulatory permitting programs using AERMOD, AERSCREEN & SCREEN3 models;
- ✓ Prepare and review applicability determinations under federal and state air quality regulations including NSR, NNSR, PSD, MACT, NSPS, NESHAP & SIP; and
- ✓ CAA Compliance plan development and implementation for Major Sources subject to CAM, MACT, NESHAP, NSPS & RACM/RAC

PROFESSIONAL OVERVIEW

Mr. Stewart McCollam is a chemical engineer with over 16 years of experience in all aspects of air quality regulation with a focus on preconstruction permitting, dispersion modeling, and compliance management.

Mr. McCollam has experience navigating complex air permitting regulations and delivering strategic compliance solutions across numerous industries including: distilled spirits and beverage alcohol production; finished hardwood product manufacturing; grain and riverport terminal operations; food and beverage manufacturing; portland cement manufacturing; power generation; surface coating; commercial printing (lithographic, flexographic, & rotogravure); synthetic organic chemical manufacturing industry (SOCMI); flat glass manufacturing; and municipal solid waste landfills.

Mr. McCollam has assisted clients with air quality modeling studies for preconstruction ambient air standard compliance demonstrations; annual compliance certifications; annual emissions statements; compliance assurance monitoring (CAM) plans; greenhouse gas (GHG) inventory/reporting; human health risk-based compliance demonstrations required by state and local air toxics regulations; National Ambient Air Quality Standards (NAAQS) compliance demonstrations (single and multi-source); New Source Review (NSR) permitting; operation and maintenance (O&M) plans; semiannual monitoring reports; significant impact level (SIL) determinations; and source-specific State Implementation Plan (SIP) limits. His professional environmental experience includes work in Arkansas, Alabama, California, Florida, Indiana, Illinois, Kentucky, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, Oklahoma, South Carolina, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wyoming.

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*AIR QUALITY PERMITTING **EXPERIENCE***

Preconstruction Air Permit Applications, Multiple Industries and States: *Coordinated communication between project team, client team, client's legal counsel (as applicable), and Clean Air Act (CAA) permitting agencies (Federal, state, and/or local). Deliverables for preconstruction air permitting applications included narrative discussion and description of the stationary source, agency forms, potential-to-emit (PTE) calculations, emissions inventories, dispersion modeling analyses for regulated air toxics, applicability determinations, process flow diagrams, and permit shields.*

New and Modified Source Air Permits, Multiple Industries and States: *Coordinated communication between project team, client, and delegated CAA administrator. Deliverables consisted of air permit applications including narrative project description, agency forms, emissions inventories, dispersion modeling analyses for regulated air toxics, process flow diagrams, applicability determinations, notifications to abutting property owners, and public notices (as applicable).*

Title V Operating Permit Applications, Multiple Industries and States*: Coordinated communication between project team, client team, client's legal counsel (as applicable), and Clean Air Act (CAA) permitting agencies (federal, state, and/or local). Deliverables consisted of Title V Operating Permit (TVOP) applications containing narrative discussion or source, agency forms, emissions inventories, applicability determinations, compliance assurance monitoring (CAM) plans, and permit shields.*

Louisville Metro Air Pollution Control District (LMAPCD) Permit Writer, Kentucky: *Reviewed source PTE calculations, application forms, project emissions netting analyses, and source aggregation analyses for minor, conditional major, and NSR major stationary sources in Jefferson County Kentucky. Authored draft permits and statement of basis documents for various source categories including appliance manufacturing, surface coating operations, distilled spirits production facilities, stationary engines, grain terminals and SOCMI. Conducted field compliance evaluations of permitted sources.*

*AIR QUALITY MODELING **EXPERIENCE***

Human Health Inhalation Risk Assessment, Multiple Industries, Jefferson County Kentucky: *Prepared human health risk assessments [environmental acceptability demonstrations (EAD)] quantifying carcinogenic and chronic noncarcinogenic risk from regulated Toxic Air Contaminants (TAC) emissions in accordance with LMAPCD Strategic Toxic Air Reduction (STAR) Program regulations for various industrial sources. Using U.S. EPA's preferred near-field air dispersion model (AERMOD), determined maximum ambient concentrations for TAC emitted from regulated air emissions sources. Individual and cumulative TAC emissions evaluated against benchmark ambient concentrations (BAC) for comparison against STAR Program environmental acceptability goals (EAG). Submitted BAC determinations for Polycyclic Organic Matter Compounds (POM) and Polycyclic Aromatic Hydrocarbons (PAH) using inhalation unit risk estimate (URE) for Benzo(a)pyrene and applicable POM/PAH Inhalation cancer potency factors established by California Division of Occupational Safety and Health (Cal/OSHA).*

Ambient Air Compliance Strategies, New Source Review (NSR) Major Stationary Source, Kentucky: *Developed compliance strategies and source operating scenarios to comply with the 2010 1-Hour National Ambient Air Quality Standard (NAAQS) for sulfur dioxide (SO_2). Provided technical guidance and assistance to legal counsel for negotiation of agreed orders requiring control measures (increase to stack height) for inclusion in the State Implementation Plan (SIP).*

*AIR QUALITY MODELING **EXPERIENCE***

1-Hour SO_2 NAAQS SIP Air Dispersion Modeling Analysis, NSR Major Stationary Source, Kentucky: Prepared 1-Hour SO_2 NAAQS multisource air dispersion modeling analysis using U.S. EPA's preferred near-field dispersion model (AERMOD) to dissent/petition against local CAA administrator's proposed SIP attainment modeling demonstration for a partial county SO_2 NAAQS nonattainment area. Conducted detailed review of SO_2 ambient monitoring data to develop representative background concentration not influenced by concurrently modeled sources shown in administrator's modeling domain. Prepared and submitted an alternative model request to U.S. EPA Region 4. Developed technical comments for submission to administrator for proposed SIP revision. No required emissions reduction from client stationary source was required as a result of the petition and negotiation process with CAA administrators.

*ENVIRONMENTAL, HEALTH & SAFETY **EXPERIENCE***

Battery Energy Storage System Cumulative Environmental Assessment & Site Assessment Report, Kentucky: *Led a multi-disciplinary project team to produce a Cumulative Environmental Assessment and Site Assessment Report (CEA/SAR) in accordance with KRS 224.10-280 and KRS 278.708 for the proposed installation and operation of a 400-megawatt / 1600-megawatt hour Battery Energy Storage System Facility (BESS Facility) at an existing electric generating station. For the CEA/SAR, evaluations of impacts and proposed mitigations were successfully prepared for: fugitive air emissions; property value and land use; scenic compatibility; rail and roadway traffic; setback conformity; site development and zoning; stormwater discharges; water withdrawal; and wastes.*

Methyl Isobutyl Ketone Risk Goal Modification Strategy and Implementation, Municipal Solid Waste Landfill, Kentucky: *In coordination with client and outside council, prepared strategic communication documents for presentation to local CAA administrator petitioning for change to LMAPCD STAR Program risk goal for Methyl Isobutyl Ketone (MIBK). Led technical meetings with agency and client stakeholders detailing proposed strategy to gain agency concurrence and alignment with site proposed compliance plan for MIBK risk goal change. Led Implementation of site compliance plans requirements related to air permit modification and EAD.*

*CARBON CAPTURE, UTILIZATION, & SEQUESTRATION **EXPERIENCE***

Post-Combustion CO_2 Capture System – E.W. Brown Generating Station, Kentucky: *In partnership with the University of Kentucky Center for Applied Energy Research (CAER) and funding by a grant from the U.S. Department of Energy, National Energy Technology Laboratory (DOE/NETL) (Project No. DE-FE0007395), prepared an Environmental Health and Safety Assessment (EHS Assessment) for a pilot-scale post-combustion CO_2 capture system (PCCCS) collocated at the E.W. Brown Generating Station (EWB). The EHS Assessment evaluated air emissions, wastewater discharges, waste management, employee hazards, and community impacts for two different carbon capture solvents under consideration for the EWB PCCCS.*

National Environmental Policy Act Assessments, Carbon Capture Demonstration Projects: *Prepared categorical exclusion and no significant impact demonstrations under the National Environmental Policy Act (NEPA) assessments for carbon capture, utilization, and sequestration demonstration projects under DOE/NETL Project Nos. DE-FE0007395, DE-FE0012926, and DE-FE0031583.*

CARBON CAPTURE, UTILIZATION, & SEQUESTRATION ***EXPERIENCE***

Technology Risk Assessment, University of Kentucky Center for Applied Energy Research, Kentucky: *In partnership with CAER and funding by a grant from DOE/NETL (Project No. DE-FE0012926), prepared an assessment of EHS risks (Risk Assessment) that could impede commercialization of a catalyzed amine-based solvent CO_2 capture system developed by CAER. For the Risk Assessment, the project team:*

- *Estimated magnitude of potential ancillary and incidental air and water emissions, solid wastes produced, accumulated waste products, and fate of contaminants from a simulated coal combustion flue gas stream.*
- *Conducted a literature search examining potential human health effects and ecotoxicity of emissions and environmental degradation products identified.*
- *Performed an engineering analysis to identify control and mitigation strategies to eliminate, substitute, or minimize hazardous materials in the proposed technology.*
- *Addressed compliance and regulatory implications of the proposed technology under the Comprehensive Environmental Response and Liability Act of 1980 (CERCLA), Toxic Substances Control Act (TSCA), Clean Water Act (CWA), Clean Air Act (CAA), Superfund Amendments and Reauthorization Act (SARA) Title III, and the Occupational Safety and Health Act (OSHA).*

Preconstruction Air Permitting, Wyoming Integrated Test Center, Dry Fork Station, Wyoming: *Preparation of minor NSR preconstruction air permit application package for a 10 Megawatt equivalent (MWe) pilot-scale PCCCS proposed for collocation at the Dry Fork Station (420 MW steam electric generating unit) funded by a grant from DOE/NETL (Project No. DE-FE0031583). The deliverable consisted of a narrative discussion of the proposed source, agency forms, potential-to-emit (PTE) calculations, best available control technology (BACT) evaluation, 40 CFR 60 Subpart Dc applicability determination, permit shield, and Wyoming Environmental Quality Act of 1973 conformity demonstration.*

Air Dispersion Modeling Analysis, University of Kentucky Center for Applied Energy Research, Kentucky: *Prepared air dispersion modeling analysis for conceptual coal-fired electric generating facility utilizing a heat-integrated PCCCS at varying electrical generating loads with reduced temperature and flowrate flue gas parameters. Utilizing AERMOD, the analysis evaluated exhaust plume dispersion characteristics and ambient ground level concentrations for NAAQS criteria air pollutants in complex terrain to identify potential NSR permitting obstacles in technology commercialization and deployment.*

*****ADDITIONAL PROJECT-SPECIFIC & INDUSTRY-SPECIFIC EXPERIENCE AVAILABLE UPON REQUEST*****