



**Jesse R. Toepfer**, PhD, PE, PMP  
Principal Consultant & Chief Executive Officer  
+25 years of experience · Chesapeake, Virginia

Whether as an executive, a project manager, or a adjunct technical advisor, Jesse's leadership has always been marked by passion, technical wherewithal, and team dedication. He has led and directed dozens of multi-disciplinary efforts requiring independent judgment, strategic problem-solving skills, and technical innovation. He is our subject matter expert in formal Multi-Criteria Decision-Making techniques whose practical applications encompass system efficiency, energy and infrastructure optimization, strategic use of assets, and liability-to-asset conversion delivery. His experience spans various aspects of water treatment with a focus on groundwater remediation, industrial process water needs, discharge compliance, and municipal industrial pretreatment programs. Jesse is knowledgeable with design, construction, operation, and maintenance of numerous active and passive water treatment technologies targeting heavy metals, hydrocarbons & petrochemicals, sulfate compounds, selenium, arsenic, cyanides, lead, mercury, cadmium, thallium, and various radionuclides. Throughout his career, Jesse's experience has also spanned radioactive materials licensing with the Nuclear Regulatory Commission (NRC) and Agreement States. He has authored and/or co-authored various standard operating procedures, policy directives, training programs, and specifications.

## EDUCATION

PhD, Engineering Management, Old Dominion University, Norfolk, Virginia, USA, 2019

MS, Engineering Management, Old Dominion University, Norfolk, Virginia, USA, 2010

BS, Nuclear Engineering Technology, Excelsior College, Albany, New York, USA, 2008

## REGISTRATIONS

Professional Engineer #0402051850, Virginia Society of Professional Engineers

Project Management Professional (PMP)® #1369082, Project Management Institute (Central Virginia Chapter, Incorporated)

## MEMBERSHIPS

Member, American Society of Mechanical Engineers

Member, Project Management Institute (Central Virginia Chapter, Incorporated)

## HIGHLIGHTS

- +25 years total experience spanning water treatment, environmental compliance, nuclear power support, radiation protection, and military service.
- Multi-criteria Decision Making (MDCM) expert/ Strategic Optimization Expert (SOE) with practical applications in infrastructure planning, logistics, environmental impacts, and risk mitigation.
- PM for various datacenter water treatment projects and datacenter-related due diligence studies.
- Radiation related expertise includes: uranium recovery and site closure, site decontamination, NORM and radon expert, US navy nuclear operator, fixed and portable gauges, X-ray safety, neutron physics, fusion, radiological environmental monitoring programs, and health physics instructor.
- Successfully managed more than \$300 million in capital projects to date involving complicated environmental and engineering systems. Work includes new construction, treatment facilities, civil earthwork projects, and asset optimization/ re-configuration studies. Well adept to directing technical work that involves significant regulatory oversight and corporate reporting requirements.
- Assistant Adjunct Professor (Old Dominion University); lecturer and educator at the graduate level.
- Graduate of the US Navy's Nuclear Propulsion Program; qualified Reactor Technician aboard USS Montpelier; qualified in Sub-Surface (SS) warfare.

## **MAJOR PROJECT EXPERIENCE**

### **WATER TREATMENT FOR DATA CENTERS**

#### **Confidential Client | Northern Virginia | 2023 - 2024**

Project Manager and process-mechanical engineer of record for a 1.6 MGD data center water treatment plant. Led project team through post due diligence, conceptual design, selection of treatment technology, through completion of design and commissioning. Coordinated subcontractors and collaborated extensively with multi-discipline team comprised of several consulting firms.

#### **Wolfspeed Semiconductor | North Carolina | 2022 - 2023**

Senior advisory consultant for Wastewater Treatment Plant (WWTP) preliminary/ feasibility design and cost estimation, equipment sizing and selection, vendor liaising, and technology selection for 16 MGD WWTP semiconductor facility near Raleigh, NC. Coordinated vendors and subcontractors; supported project manager and project technical lead in appropriate technology sequence/ treatment trains, and approach to waste disposal.

#### **Environmental Due Diligence Efforts | Multiple States | 2024 - Present**

Senior regulatory and technical advisor for water resourcing, environmental compliance, usage, discharge, and treatment capabilities for multiple data center clients across the United States. Groundwater withdrawals and reinjection in compliance with applicable groundwater protection standards, surface water/ environmental discharges in accordance with NPDES discharge permits, off-site disposal, and municipal industrial pre-treatment programs.

### **INDUSTRIAL WATER**

#### **Wastewater Treatment Plant (WWTP) Ethane Cracking Plant\* | Formosa Petrochemical | Baton Rouge, Louisiana | 2018**

As Project Manager, directed the engineering and conceptual design of a new (greenfield) 7.2 MGD wastewater treatment plant for an ethane cracking facility near Baton Rouge, Louisiana. This project also involved the identification and definition for treatment of various impacted water streams from the processing plant and from contact storm water. Selected water treatment system design involved a membrane bioreactor (MBR) with downstream ultrafiltration and electro dialysis reversal (EDR) for plant reuse / recycle water.

#### **Wastewater Treatment Plant – Condition Assessment\* | Dominion Energy | Surry County, Virginia | 2018 - 2019**

As Project Manager, performed asset condition assessment of existing WWTP, followed by conceptual design and feasibility-level design of replacement system. Selected technology of existing plant as well as replacement plant involved standard septic treatment, followed by anaerobic digestion of settled sludge, and settlement/ stabilization.

#### **Water Treatment Facility Design | Confidential Client | Long Island, New York | 2018**

As Project Manager, developed a preliminary water treatment plant design and associated cost estimate (CAPEX and per annum OPEX) for an IX-based water treatment system specifically designed to target Radium-226/228, Uranium Oxide Compounds (UO<sub>2</sub>X), as well as various Volatile Organic Compounds (VOCs) and other radioactive constituents in the U-238 and U-235 radioactive decay series.

#### **Magnolia Combined Cycle Generating Station | Magnolia, Mississippi | 2023 – 2024**

Senior technical advisor for copper mitigation study to reduce accumulated copper in water treatment plant discharges. Led efforts to identify and resolve copper buildup, identified feasible engineered and regulatory alternatives. Worked with client to identify a “best-fit” solution that minimized financial and regulatory risks while simultaneously engendering continued plant operations.

#### **National Priority List (NPL) Environmental Superfund Site Groundwater Remediation Program & Water Treatment Program | Homestake Mining Company | Cibola County, New Mexico | 2013 – 2017**

As Project Manager, oversaw the planning, design and construction of three separate water treatment systems. (1) a 1200 gpm system using natural zeolites, (2) an 1,800 gpm lime softening system (solids contact clarification system), with downstream microfiltration, and reverse osmosis, and (3) an in-situ tripolyphosphate permeable reactive barrier to contain the migration of an impacted groundwater plume.

#### **Coal Pile Runoff (CPR) Pilot Treatment Plant | Chesterfield Power Station, Dominion Energy | Chesterfield, Virginia | 2017**

Supported project management and construction management efforts, while simultaneously providing technical and process design expertise to help ensure Chesterfield was able to complete its EPA-driven initiatives in a timely manner. Project required an in-depth understanding of water treatment processes targeting arsenic, cadmium, mercury, and other trace metals, as well as a thorough knowledge of EPA regulations, esp. those pertaining to 40 CFR 257 and 261.

#### **Water Management System Evaluation and Optimization Study | Montana Resource & Atlantic Richfield Company | Butte, Montana | 2019**

Senior Technical Advisor to the engineering team for a study to determine remedial adequacy of the water treatment systems and water management practices at the historic Berkeley Pit in Butte, Montana, a well-known CERCLA site under active remediation.

#### **Wetlands Water Treatment System Evaluation / Mercury Recovery Pilot Plant | Dow Chemical | Bay City, Michigan | 2019**

Technical Lead for this project site which experienced elevated levels of mercury in its effluent discharges; pilot project involved design and development of an alum-induced coagulation water treatment system with subsequent filtration of suspended solids.

### **Water Treatment Plant – Construction and Operation Re-baselining Study | Caerus Oil & Gas | Denver, Colorado | 2017**

As Technical Lead, directed the efforts of discipline engineering staff in evaluating and assessing the condition and completion status of a 7 million-gallon-per-day (MGD) water treatment facility for a client in southern Colorado.

### **NUCLEAR / HEALTH PHYSICS / RADIATION PROTECTION**

#### **Radiation Safety Officer | Uranium Recovery Facilities**

- Sweetwater Uranium Project | Sweetwater, Wyoming:
  - o General Radioactive Materials License (WYSUA-1350), 2020 – 2021.
  - o Specific license governing site's nuclear density gauges (Lic. No.: 49-19005-01), 2020 – 2021.
- Pitch Reclamation Project | Sargents, Colorado: (Lic. No.: 150-012013, 2013 – 2017.
- Homestake Reclamation Project | Grants, New Mexico: (SUA-1471), 2013 – 2017.

#### **Senior Lecturer | Dade Moeller and Associates, NV5**

Instructor and educator having served in a leading role as part of Dade Moeller's instructor team, teaching health physics, radiation protection, X-ray fundamentals, biological effects of ionizing radiation, radon, dosimetry, instrumentation, and rad-related litigation. Taught six 40-hour Radiation Safety Officer courses during my tenure.

#### **Radiation / Radon Dosimetry Expert and Senior Consultant | California Water Service, Upper Bodfish Site, California**

Provided expert witness and radon/ radiation dose assessments and measurements to support worker protection concerns. Set gamma dosimeters and radon (indoor/ outdoor) detectors; created radiation mapping to identify hotspots; calculated occupational radiological dose to workers.

#### **Radioactive Waste Management & Disposal Project | United Nuclear Corporation – New Haven, Connecticut**

Senior technical resource and regulatory expert supporting the needs of a radioactively contaminated legacy site involving asbestos, highly enriched uranium, and other hazardous waste. Served as the owner's representative to evaluate alternatives for waste transportation and disposal; reviewed waste management plan, final status survey plan, and developed positional narratives to support regulatory compliance.

#### **Radiation / Radon Dosimetry Expert and Senior Consultant | ProTechnics – Core Labs, Lafayette, Louisiana**

Audited the radiation protection program in place at the Core Labs facility in Lafayette, Louisiana. Identified gamma and airborne radioactivity areas of concern for worker protection; assisted in corrective action planning, dosimetry modeling, and program management.

#### **Radiological Environmental Monitoring Program | Xcel Energy, Monticello Nuclear Generating Station – Monticello, Minnesota**

Program lead for Monticello's "REMP", in charge of reviewing laboratory analytical results and preparing the site's Annual Radiological Environmental Operating Report (AREOR)—a regulatorily mandated report that presents the radiological exposure pathways, radiological dose, and compliance efforts of a nuclear utility.

#### **Project Manager | Nuclear Services Department, Electric Motor and Contracting Company, Chesapeake, Virginia**

Oversaw the design and build-out of the exhaust system for the main autoclave during the construction of the company's new production building. Managed the complete oversight of dozens of motor/generator repair and refurbishment projects.

### **NAVAL MILITARY FACILITIES**

#### **Naval Experience**

Graduate of US Navy Nuclear Propulsion Program; qualified in Sub-Surface Warfare (SS); and Trained nuclear operator with expert knowledge of complex mechanical, thermal, and fluid systems (e.g., diesel generators, boilers, electrical turbine generators, pumps, propulsion turbines, gears, piping arrays and valve networks).

### **CAREER HISTORY**

#### **Toepfer & Associates, PLLC | Principal & CEO**

Providing litigation support as a technical expert and advisor to counsel. Trusted advisor for technical and non-technical challenges relating to nuclear, radiological, water, energy, environmental programs, and optimization of engineered systems; and supports client initiatives involving sustainable and environmentally responsible solutions involving licensing and engineered systems.

#### **Stantec Consulting, Inc. | Principal, Senior Project Manager**

Principal/ Senior Project Manager (PM) and technical subject matter expert supporting industrial water needs, including water treatment, groundwater remediation, re-use, stewardship, balance-of-plant, and optimization; support client initiatives involving sustainable and environmentally responsible solutions involving licensing and engineered systems.

#### **NV5 | Vice President Strategic Services**

Responsible for business development growth into new markets. Provided technical expertise for nuclear and health physics projects, dose assessments, and litigation support as an expert witness.

#### **Old Dominion University | Adjunct Professor**

Lecturer supporting academic needs of teaching faculty. Currently teaching engineering economics, ethics, and project management.

#### **Arcadis US, Inc. | Client Program Manager**

Account Lead: Alcoa Corporation, Arconic Corporation, Barrick Gold Corporation, and Nevada Gold Mines LLC: \$4 million per annum with sustained net positive year-over-year growth; Program Director: Nuclear Programs. Supported Xcel Energy's Monticello Nuclear Generating Plant with their Radiological Environmental Monitoring Program (REMP); Led, developed, and delivered feasible industrial infrastructure growth and development with respect to radiological environmental programs and optimization of engineered systems; and Assisted clients with sustainable and environmentally responsible closure and post-closure planning; provide technical expertise for regulatory and government affairs.

#### **Homestake Mining Company | Closure/ General Manager**

Primary duties included: leading, managing, and directing the ongoing activities of all office staff, consultants, engineering staff, and crew technical operators; also worked routinely with the company's legal department on various water rights issues and provided expert testimony during public hearings involving water rights and water treatment projects.

#### **Barrick Gold Corporation | Project Manager**

Planned, designed, and permitted a hazardous waste treatment and storage facility (TSF) for mercury; Executed and oversaw the construction of two mine ventilation shafts via blind boring at Barrick's Cortez mine in Nevada. (Mercury TSF project was the first such facility ever permitted in Nevada under RCRA.); During construction of the company's new production building, oversaw the mechanical design and build-out of the exhaust system for the main autoclave; and Oversaw dozens of motor / generator repair and refurbishment projects.

### **PUBLICATIONS & WHITEPAPERS**

Toepfer, J. R.. *Critical elements for an on-site mercury concentration and holding facility – 20175. Waste Management 2020 Conference, 2020.*

Toepfer, J. R. Forbort, J., and Dreiling, M. *Ex-situ recovery of mercury from impacted groundwater. ETEBA 2019, Business Opportunities and Technical Conference, 2019.*

Toepfer, J. R., Potter, S., Roller, J., Wahlberg, J., and Palmer, G. . *A new framework for accelerated site closure: Dynamic groundwater recirculation. Radiological Environmental Effluents Workshop, 2019.*

Toepfer, J. R.. *A comparison of multi-attribute utility theory, the analytic hierarchy process, the analytic network process, and new hybrid approaches for a case study involving radon. (Publication No. 27539422) [Doctoral dissertation, Old Dominion University]. ProQuest Dissertations Publishing., 2019.*