

Andrew G. Howell, Ph.D.

Staff Consultant



EXPERIENCE

Staff Consultant, STPA:
2025-Present

Technical Executive, EPRI
2018-2025

**System Chemist/Senior
Chemist, Xcel Energy**
1982-2017

EDUCATION / CREDENTIALS

Colorado School of Mines
Ph.D. in Chemistry (Minor in Metallurgy)

**University of Missouri-
Columbia**
B.A. & M.S. in Chemistry

MEMBERSHIPS

- Air-Cooled Condenser (ACC) Users Group, Chair Since 2009
- Association of Materials Protection and Performance (AMPP formally NACE)
- Power Plant Environmental Chemistry Committee (PPEC)

PUBLICATIONS

Has presented and authored over 100 technical publications and presentations.

Dr. Howell has over 40 years of experience in power plant chemistry. Andy is perhaps best known for the Dooley-Howell Index for characterizing flow accelerated corrosion (FAC) of Air Cooled Condensers (ACC) and being one of the founding members and Chair of the Air Cooled Condenser Users Group initiated in 2009. He has performed many inspections of ACC units and remains an active member of the ACC Users Group. Since joining STPA, he has continued providing consulting services for plants with ACC units.

Prior to joining Sheppard T. Powell Associates LLC (STPA), Mr. Howell served as Technical Executive for the Electric Power Research Institute (EPRI). While with EPRI, he managed research for electric power generation, focusing on performance improvement, steam cycle chemistry and corrosion, and efficient operations and maintenance for optimizing electric generation. He was actively involved in wet, dry and hybrid cooling research and applications, including ACC units.

Prior to joining EPRI, Dr. Howell served as a Senior Chemist and then as the System Chemist for Xcel Energy. While his focus was on chemistry, Dr. Howell also performed metallurgical evaluations while working for Xcel Energy. At Xcel Energy he provided technical consulting support for their fleet of stations in Colorado with a variety of steam generators including drum type boilers, supercritical boilers, and combined cycle units. Duties included:

- Conducting problem-solving investigations for steam turbines, turbine generators, steam-generator tubing, tube-and-shell heat exchangers, air-cooled condensers (ACC), water cooled condensers and other cooling systems. Activities included: failure analysis and material degradation evaluations; inspection of ACC and other equipment; field studies to mitigate fouling, deposits, scale, and/or corrosion; recommendations for system improvements; project management; follow-up and prevention of problem events.
- Developing best practice chemistry guidelines for the following: steam/water cycle chemistry for systems with copper alloys, a chemistry program for a new supercritical coal-fired boiler with hybrid air / water cooling system, on-line instrumentation and chemistry monitoring systems, shutdown / layout / startup, boiler makeup water chemistry.
- Serving as chemistry lead to a variety of water management projects including zero liquid discharge system evaluation, cooling water treatment optimization, and using carbon dioxide for pH control in cooling water.