

EDUCATION

- California State University, Sacramento
BS with Honors, 1963
Post-Graduate Courses in Advanced Mathematics, Civil and Structural Engineering, 48 SH, GPA 3.44, 9/65-6/72
- University of California, Davis
Post-Graduate Courses in Advanced Mathematics, Civil and Structural Engineering, 59 QH, GPA 3.18, 9/72-6/75



PROFESSIONAL LICENSES and SOCIETIES

- Registered Civil Engineer, California, C17007
- Member, American Society of Civil Engineers
- United States Committee on Large Dams
- American Concrete Society

EXPERIENCE

- 2000 to Present **MBK Engineers, Sacramento, CA**
Consulting Civil Engineer
Developing and reviewing plans for modification of spillway and outlet works, temperature control and similar hydraulic structures; investigation and structural analysis of failures; independent technical review of design, plans and specifications for hydraulic structures; training in dam safety inspection.
- 1988 to 1997 **US Army Corps of Engineers, Sacramento, CA**
Chief, Structural Design (CW) Section
Responsible for the design of hydraulic structures for civil works projects in California, Nevada and Utah.
- 1983 to 1988 **US Army Corps of Engineers, Sacramento, CA**
Chief, Civil Design Section A
Responsible for design of hydraulic structures and bridges; dam safety inspection and maintenance programs; supervision of design and construction of eight FERC licensed retrofit hydropower plants.
- 1979 to 1983 **US Army Corps of Engineers, Sacramento, CA**
Assistant Chief, Civil Design Branch
Chief, Civil Design Section C
Responsible for design of hydraulic structures and bridges; directly responsible for seismic review of District dams.

- 1975 to 1979 US Army Corps of Engineers, Sacramento, CA
Chief, Civil Design Section B
Responsible for civil/structural design and planning of hydraulic structures for civil works projects.
- 1970 to 1975 US Army Corps of Engineers, Sacramento, CA
Structural Engineer and Work Leader, Civil Design Sections B & C
Structural design of hydraulic structures for civil works projects.
- 1968 to 1970 US Army Corps of Engineers, Sacramento, CA
Structural Engineer, Civil Design Section B
Design of various hydraulic structures for New Melones Dam Project.
- 1965 to 1968 California Department of Water Resources, Sacramento, CA
Assistant Civil Engineer
Structural design of dam, aqueduct and pumping plant structures for the California Water Project.
- 1964 to 1965 California Department of Beaches and Parks, Sacramento, CA
Assistant Civil Engineer
Civil and structural design of facilities for the California Park System.
- 1963 to 1964 California Division of Highways, Sacramento, CA
Junior Civil Engineer
Rotational training program in civil engineering at the Materials and Research Laboratory.
- 1957 to 1963 US Army Corps of Engineers, Sacramento, CA
Engineer Technician and Draftsman
Supporting engineers in design and construction; supervision of various civil and military projects.

PROJECT HISTORY

- Consulting Civil Engineer for MBK Engineers and Sacramento Area Flood Control (SAFCA) for modifications of Folsom Dam and other improvements for Sacramento area flood control.
- Independent technical review of design and plans and specifications for Turbine Bypass Facilities, and Tainter Gate Repair and Modernization, Pine Flat Dam.
- Training of engineers and dam operators in climbing safe and dam safety inspection of tainter gates, spillway and outlet works and other hydraulic structures.
- Co-leader forensic investigation team, Folsom Tainter Gate Failure; responsible charge for the design of emergency stop logs and gate repairs; peer review for USBR designed gate and stilling basin modifications.

- **Responsible charge preliminary design of structures for the American River Project (Corps of Engineers alternatives for Auburn Dam, modification of Folsom Dam, associated channel improvements along American River and Yolo Bypass)**
- **Responsible charge of structure design for Redbank and Fancher Project, Redbank Dam, Fancher Dam, modification of Big Dry Dam, Pup and Alluvial Detention Basin Dams.**
- **Responsible charge of structure design and project management for the Merced County Streams Project, Castle Dam.**
- **Responsible charge of structure design and project management for Little Dell Dam and Parleys Creek Diversion, Salt Lake City Utah.**
- **Responsible charge of Dam Safety Inspection and Dam Safety Assurance Program, including review of spillway adequacy and seismic safety for 22 dams, safety review and inspection for the addition of FERC licensed retrofit hydropower plants to 8 major Corps of Engineers dams (helped establish the nationwide program for the addition of FERC licensed hydropower plants at Corps of Engineers dams).**
- **Member of Corps of Engineers nationwide teams overseeing earthquake engineering research, and development and updating Tainter Gate design criteria.**
- **Technical manager and principle reviewer for investigation of Parrotts Ferry Bridge sagging and design, construction of retrofit repair.**
- **Structural designer and/or checker for hydraulic structures for the New Melones Dam, including steel and concrete tunnel liners, tunnel plugs, surge tank, sloping intake structure, power penstocks and low level and flood control outlets.**

SIGNIFICANT ACHIEVEMENTS

- **Meritorious Civilian Service Award, Department of the Army, US Army Corps of Engineers, for extraordinary design and evaluation efforts in support of the US Bureau of Reclamation following the failure of a spillway tainter gate at Folsom Dam, 16 August 1996.**