CURRICULUM VITAE

Name	:	**TARIQ ALTAF**
Nationality	:	Pakistani
Date & Place of Birth	:	May 11, 1958 Lahore - Pakistan
Position in Firm	:	Vice President / Head Water Resources Division
Name of Firm	:	National Engineering Services Pakistan (Pvt.) Limited (NESPAK) (www.nespak.com.pk)
Specialization in Firm	:	Hydraulics, Project Management& Administration
Contact Information	:	Cell +92 333 4262359 Email vp@nespakwr.com; ta@tariqaltaf.com Website **www.tariqaltaf.com**
Education	:	M.Sc. Water Resources Engineering (1987), George Washington University, Washington D.C. U.S.A. B.Sc. Civil Engineering (1981), University of Engineering and Technology Lahore – Pakistan
Membership of Professional Associations	:	Member Pakistan Engineering Council Member, Institute of Engineers, Pakistan Member Pakistan Engineering Congress
Training / Workshops / Seminars	:	Course on "Hydropower Development" organized by the Pakistan-German Hydropower Development Programme. Participated in the Congress of ICID (International Commission on Irrigation and Drainage) held from October 13-18, 2008 at Lahore – Pakistan. Workshop on "Experience with HEC-2 for Computing Backwater Curves" and "Design Technology Applied to Water Engineering for Irrigation", organized by Canadian Society for Civil Engineering and Institute of Engineers Pakistan. Third US-Pakistan Binational Symposium on "Mechanics of Alluvial Channels", organized by National Science Foundation (USA) and Water & Power Development Authority Pakistan. Academy for International Development (A.I.D) Mid Winter Community Seminar on "Water Resources Management", at Los Angeles, USA Seminar in Management Communication for Development, conducted by Management Training and Development Institute, Washington D.C at Orlando, Florida U.S.A. Workshop on "Sediment Measurement and Control and the Design of Irrigation Canals", organized by Hydraulic Research Wallingford U.K and the Irrigation & Power Department Government of the Punjab, Pakistan.

Countries of work experience	:	Pakistan, USA, Iran, Oman, Bangladesh
Language Proficiency	:	English & Urdu: Excellent in speaking, reading & writing

KEY QUALIFICATIONS

- *Hydraulic design of large structures like barrages, dam spillways, diversion channels, tunnels, energy dissipation structures etc.*
- *Design and layout of canals, drains and related structures*
- *Remodeling of Irrigation / Drainagesystems and design of flood protection schemes.*
- *Carry out Mathematical and Physical Model Studies.*
- *Project Planning&Management.*

EMPLOYMENT RECORD & EXPERIENCE

Employer: National Engineering Services Pakistan (Pvt) Limited (**NESPAK**)
From: January 1982 to date

Name of Assignment: Vice President / Head Water Resources Division, NESPAK
Period: June 2015 to-date
NESPAK Water Resources Division presently has more than 600 technical & support staffand the lastyear turnout of the projects directly handled by the division was Rs. 900 Million.
A large number of projects of different specialties are being carried out by WR division. Some of the prominent projects are:

- Rehabilitation & Upgradation of Ballloki Barrage & Lower Bari Doab Canal (LBDC) System
- Development of Water Resources Management, Information System (WRMIS) and Decision Support System (DSS)
- Rehabilitating Lower Chenab Canal (LCC) System
- Lining of Distributaries & Minor in Sindh Province
- Remodeling of Warsak Canal System
- Kachhi Canal Project
- Improvement of Water Resources Management of Indus Basin (IRSA)
- National Flood Protection Plan-IV (NFPP-IV)
- Upgradation of Keenjhar Lake system
- Jalal Pur Irrigation Project
- Feasibility Study of 120 MW Taunsa Hydropower Project
- Rehabilitation and Modernization of Jinnah Barrage

Name of Assignment / Project: **Punjab Irrigated Agriculture Investment Program** (Funded by the Asian Development Bank)
Period: August 2009 to June 2015
Location: Punjab, Pakistan
Client: Irrigation Department, Government of Punjab
Positions held: General Manager NESPAK / Project Manager/ Lead Design Engineer
Main Project Features

- Feasibility and Detailed design of the Rehabilitation and Upgrading (R&U) works (including Flood Management) of the Sulemanki Barrage on River Sutlej&Trimmu Barrage and Panjnad Barrages on River Chenab.
- Feasibility and Detailed design of the R&U works of the Pakpattan Canal System originating from the Sulemanki Barrage and Thal Branch Canals and distribution Systems originating from the main Thal Canal.
- Feasibility study for R&U works of RQ, QB & BS Link Canals.
- Seepage and water logging control along TS link Canal.

- Feasibility study for Water Resource Development of Cholistan.

Activities Performed: Provided overall direction of all specialists making up the consulting team and appropriately group individuals into work units. Managed relationships with PID, the Punjab Government and ADB as well as with other stakeholders and ensuring timely delivery and quality control of all the required outputs. Environmental & socialimpact assessment studies, economic analysis, construction planning, preparation of PC-1, Tender Documents and Pre-qualification documents were also part of the project preparation.

Intermittent Assignments from August 2009 to June 2015:

- Divisional Coordinator of Water Resources Division
- Convener of NESPAK administrative committee from June 2013 to June 2015.
- Participated in the High Level Technical Committee meetings constituted by the Prime Minister of Pakistan to examine "River Sutlej Lake and Park Project".
- External Examiner of MS students of Center of Excellence in Water Resources Engineering, University of Engineering & Technology Lahore

Name of Assignment / Project: **Feasibility and Detailed Design of Ganges Barrage Project, Bangladesh**
Period: June 2009 to June 2010 (Intermittent assignment)
Location: Dhaka, Bangladesh
Client: Government of Bangladesh
Positions held:General Manager NESPAK / Barrage Design Specialist
Main Project Features: For effective utilization of Bangladesh share of Ganges river flows, a Barrage on Ganges river is envisaged to be constructed for which feasibility and detailed design studies are initiated.
Activities Performed: Provided guidance to the Barrage design engineers for the preparation of feasibility level design. Reviewed the physical & mathematical model studies and provided the required guidance for further studies.

Name of Assignment / Project: **Detailed Design of Islam Barrage Rehabilitation Project, Pakistan** (Funded by the World Bank)
Period: September 2007 to August 2009
Location: Punjab, Pakistan
Client: Irrigation and Power Department, Government of Punjab
Positions held:General Manager NESPAK / Project Manager/ Lead Design Engineer
Main Project Features: Islam Barragewas constructed across River Sutlej during 1922-1927 for a design discharge of 300,000 cusecs. The barrage, the subsidiary weir and the gates operating mechanism are presently in a dilapidated condition. The aging process along with inadequate/deferred maintenance has caused general deterioration of different components and significant damages to the regulating gates and hoisting equipment.
Activities Performed: Managing all the activities related to the project which includes providing directions to all the specialties, coordination with the client and the World Bank and ensuring timely delivery and quality control of all the required outputs. The scope of the project includes review of the feasibility study, detail design of rehabilitation works, improvement of flood management and instrumentation of the barrage. Environmental & Social Impact Assessment Studies, Economic Analysis, Construction planning / Scheduling, Preparation of PC-1, Tender Documents and Pre-qualification documents were also part of the project.

Name of Assignment / Project: **Feasibility study for 40 MW Raw Site Powerhouse at Chashma-Jhelum Link (Tail) - Pakistan**
Period: April 2008 to September 2008 (Intermittent assignment)
Location: Punjab, Pakistan
Client: HK Consortium, Lahore

Positions held:Chief Engineer / Project Manager
Period:December 2006 to September 2007
Positions held:**Chief Engineer / Head Hydraulics, Dams & Hydropower Section of Water & Agriculture Division, NESPAK**
As section head responsible for the hydraulics studies of the following projects:

- *Feasibility study of Bara Dam Project, Pakistan*
- *Review of Sharda Hydropower Project*
- *Feasibility studies of Ravi Syphon &Melsi Syphon Projects*
- *Design of small reservoirs & flood carrying channels of new GHQ Islamabad*
- *Master Planning of Bagh City, Azad Jammu & Kashmir.*
- *Design of Spillway & flood carrying channel on Keenjer Lake Project, Pakistan.*

Name of Assignment / Project:**WAPDA General Consultants for vision 2025 Projects**
Period: June 2005 to December 2006
Client: Water & Power Development Authority (WAPDA), Pakistan
Positions held:Chief Engineer / Hydraulic Specialist
Activities Performed:Reviewed and proposed improvements in the design and operation of following major water sector projects of Pakistan being executed by WAPDA:

- *Mangla Dam Raising Project*
- *DuberKhawar, AlliKhawar and Khan Kawar Hydropower Projects*
- *Mirani Dam Project*
- *Kachhi Canal Project*
- *Chashma Right Bank Canal Project*
- *Sehwan Barrage Project*

Name of Assignment / Project:**Kalboh Dam Project**
Period: April 2005 – June 2006
Location: Mascat, Sultanate of Oman
Client: Ministry of Regional Municipalities Environment and Water Resources
Main Project Features: Design & Construction of a Recharge Dam
Position Held: Deputy Team Leader / Hydraulic Design Engineer
Activities Performed: Assisted the team leader in carrying out the feasibility studies required for Kalboh Recharge Dam, Oman. Coordinated with different specialties / client and prepared the feasibility report.

Name of Assignment / Project: **Feasibility Studies for the Rehabilitation of Taunsa, Sulemanki and Khanki Barrages, Pakistan** (Funded by the World Bank)
Period: January 2004 to April 2005
Location: Punjab, Pakistan
Client: Irrigation and Power Department, Government of Punjab
Positions held:Chief Engineer (Hydraulics)
Activities Performed:As Chief Hydraulic Engineer designed New Khanki Barrage to replace the existing about a century old Khanki Headworks. Also carried out the Feasibility Studies for Remodelling of Taunsa Barrage and Sulemanki Barrage. Plan and supervised Physical Model Studies for Taunsa Barrage and Khanki Barrage.

Name of Assignment / Project: **Basha Diamer Dam Project, Pakistan**
Period: August 2002 to December 2003
Client: Water & Power Development Authority (WAPDA), Pakistan
Positions held:Chief Engineer (Hydraulics)
Activities Performed: Worked with NEAC Consultants, a joint venture of NESPAK, ACE, Binnie Black & Veatch, UK and MWH Energy & Infrastructure Inc. USA for approx. 5 billion U.S $, 3600 MW Basha Diamer Dam Project. Designed the spillway and outlet works. Developed river rating curves using HEC-RAS.

Period:September 2002
Client: Government of Iran
Positions held:Hydraulic Specialist
Activities Performed: Visited following projects in Iran as Hydraulics specialist. Reviewed the design, studied site problems and suggested improvements in the design:

- *Kalagan Dam Project, Iran*
- *Zemkhan Dam Project, Iran*
- *Dez to Qom Roud Water Transmission Tunnel Project, Iran*

Name of Project: **Ghazi Barotha Hydropower Project, Pakistan** (cost 2.2 Billion US $)
Period: 1990-1992, 1995-2002
Location: Lahore-Pakistan
Consultants: Joint venture of NESPAK, ACE, Ewbank Prece Ltd. Harza Engineering Co. International and Binnie and Partner (overseas) Ltd.
Client:Water & Power Development Authority (WAPDA)
Positions held:Hydraulic Design Engineer
Main Project Features:It is a major run-of-the-river power project with 1,450 MW installed capacity. The project has three main components; a barrage, a power channel and a power complex. The barrage located about 7 km downstream of Tarbela dam, is able to pass the design flood of 660,000 cusecs (18,700 cumecs). The 52 km long, concrete-lined power channel will convey upto 56,500 cusecs (1,600 m3/s) from the barrage to the power complex. The power complex will include five 290 MW power units with average annual energy output of 6,600 GWh.
Activities Performed: One of the team members who designed the Ghazi Barrage, power channel and the ancillary works. Carried out the hydraulics design of different project structures including the barrage and the power channel. Carried out the mathematical model studies and supervised physical model studies to verify the design of the barrage and other hydraulic structures. Worked on this project during feasibility and detailed design studies and construction. Also involved in different environmental and social studies.

Period: December 1993 - May 1995
Positions held: **SeniorHydraulic Engineer** (Hydraulics, Dams & Hydropower Section of Water & Agriculture Division, NESPAK)
Activities Performed:

- *Carried out mathematical model and other hydraulic studies involved for the design of "Bridge on River Chenab at Shershah", Pakistan. Also supervised physical model studies.*
- *Reviewed the "Baglihar Hydroelectric Project, India", and prepared an alternate design of the project in the light of Indus Waters Treaty 1960. This includes calculation of Firm power, pondage, capacity of power house, design of spillway and power intake etc.*
- *For "Flood Protection and Drainage Scheme for Bukha Town", Sultanate of Oman, designed the flood protection scheme. This includes design of about 6 km long flood by pass channels along the flood protection dikes , design of culverts at road crossings and design of the protection works*.

Name of Assignment / Project: **Sistan River Flood Works Rehabilitation Project, Iran**
Period: September 1992 – December 1993
Location: Tehran, Iran
Client: Ministry of Water Resources, Government of Iran
Position Held: Senior Design Engineer
Main Project Features: At the point of entry into Iran, the Hirmand River bifurcates into two branches namely Sistan river and Parian river. Sistan river runs across Iranian territory for about 60 km before outfalling into Hamun-e-Hirmand. Three barrages (Kohak, Zahak and Sistan) have been constructed across the Sistan river to divert water for irrigation purpose.
Sistan river outflows its banks during floods and causes extensive flood damages. This project aimed at mitigating the flood losses mainly through improvement and upgrading of existing flood protection works and construction of some new works. Rehabilitation of Kokak Barrage was also included in this project, which became un-operative due to silting up of off taking canal.

Activities Performed: Designed the river training works of Sistan river. Analysed flood profiles from mathematical model and optimized location of the dykes. Designed the dykes, other protection works and the Kohak Barrage rehabilitation works.

Period:January 1982 to December 1990
Positions held:**Junior Engineer / Senior Engineer,** Hydraulics Division NESPAK
Participated in Hydraulic studies of the following projects:

- *"Feasibility Study for dredging of Baran Dam Reservoir" Pakistan*
- *"Rehabilitation of Khirther Canal System Project" Pakistan*
- *Flood Protection Studies of Area Development Scheme, Dabara&Karak, Pakistan.*
- *Kalabagh Dam Project, Pakistan,*
- *Zubair Irrigation Project, Iraq.*
- *Rumaitha Irrigation and Drainage Project, Iraq.*
- *Euphrates East Drain Project Iraq*

PUBLICATIONS

- "Long Term Behaviour of QadirabadBalloki Link Canal", Master Thesis 1987 and Paper presented in Pakistan Engineering Congress 1992.

- “Hill Torrents of Pakistan”, Paper presented in Pakistan Engineering Congress 2015.

- “Instream Hydrokinetic Power Technology – A case study of Ghazi Barotha Channel”, Paper presented in Pakistan Engineering Congress 2015.

Date: April11, 2017 **Signature:**