



DAMS SAFETY COUNCIL



**OFFICE OF THE CHIEF ENGINEERING ADVISOR & CHAIRMAN
FEDERAL FLOOD COMMISSION, ISLAMABAD**

1. DAMS SAFETY COUNCIL/DSC-WING

1.1. Creation of Dams Safety Council

Dams Safety Council (DSC) was established in 1987 within the office of CEA/ CFFC with the aim to review comprehensive plans of new dams and monitoring their implementation including annual and periodic inspections for effective repairs and efficient operation of existing dams etc. In the backdrop of 2004 repair issues with Sukkur Barrage, the issue of Barrage safety was further added to the functions of Council.

Recognizing the need for full-fledged monitoring and inspection of dams and reservoirs, a proposal for creation of a Dams Safety Council was agreed by Establishment Division in 1981 on the suggestion of international agencies for the purpose of ensuring safety of dams in Pakistan. In the absence of such regulatory organization, officials concerned even with the most important dams/barrages are often negligent towards their safe operation and maintenance. In order to have an independent system of dam safety monitoring by third party, Dams Safety Council is extremely important.

Large Dams are being operated & maintained by WAPDA which play a very critical role in Pakistan's economy. Other medium & small dams are owned, operated & maintained by respective Provincial Governments and these dams have also brought prominent change in the economic condition of villages and abadies at Divisional/District level. It will not be out of place to mention here that in Pakistan, there exist 374 large dams (including reservoirs & barrages as per ICOLD definition) as well as hundreds of medium and small dams. Province/Agency wise detail is given in **Table 2.1**.

Table 2.1: Province/Agency Wise Summary of Dams in Pakistan*

Territory	Completed Dams						On-going/ Proposed		
	Large Dams [^]		Small/Medium Dams		Total		On-going (No.)	Proposed (No.)	Total (No.)
	No.	Gross Capacity (MAF)	No.	Gross Capacity (MAF)	No.	Gross Capacity (MAF)			
Punjab	71	0.662879	3	0.004779	74	0.667658	05	02	07
Sindh	08	0.216255	80	0.181903	88	0.398190	39	07	46
Khyber Pakhtunkhwa	25	0.182802	02	0.002462	27	0.185264	15	20	35
Balochistan	159	0.737913	441	0.15745	600	0.882998	454	-	454
Merged Areas (Ex. FATA)	19	0.117333	-		19	0.117333	-	-	00
AJ&K	-		-				-	34	34
Sub-Total	282	1.917182	526	0.334219	808	2.251411	513	63	576
WAPDA's Mega Dams	8	18.902946	-	-	8	18.902946	3	13	16
Grand Total	290	20.820128	526	0.334219	816	21.15434	516	76	592

* It includes total number of completed, ongoing and proposed dams in Pakistan, upto year 2021.

[^] A dam with a height of 15 meters or greater from lowest foundation to crest or a dam between 5 meters and 15 meters impounding more than 3 million cubic meters, and defined in greater detail in the World Register of Dam.

1.2. Organogram

Dams Safety Council (DSC) is headed by a Grade 20 officer designated as Chief Engineer (DSC). The Organogram of Dam Safety Wing is shown in **Figure 2.1**.

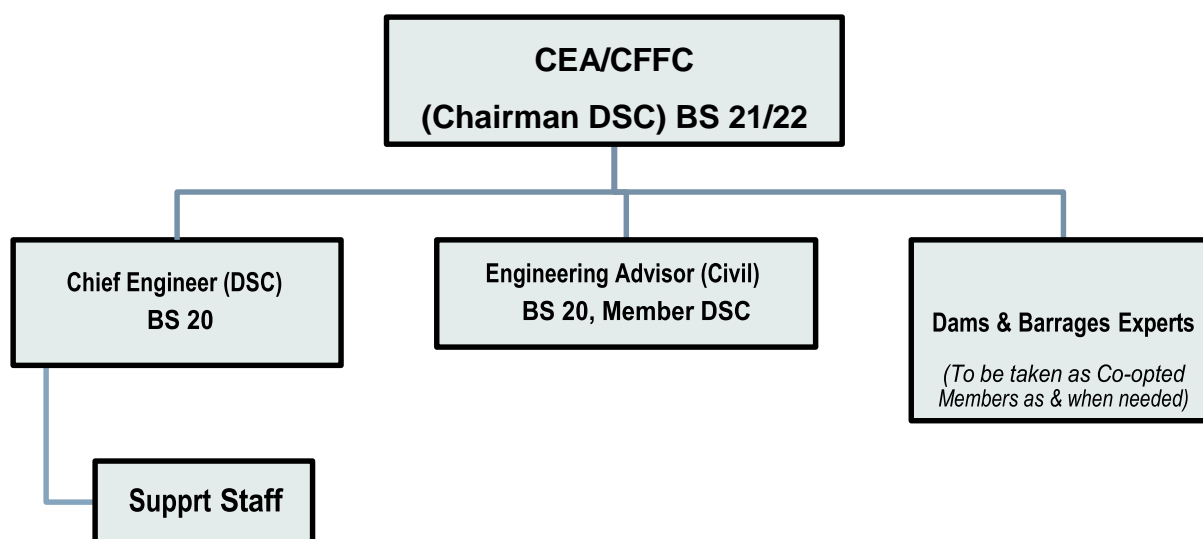


Figure 2.1: Organogram of Dams Safety Council

1.3. Issues Faced by Dams Safety Council

Dams Safety Council is most understaffed wing of CEA & CFFC. A study for strengthening the regulatory capacity of Dam and Barrage Safety Council of O/o CEA & CFFC was conducted in 2010 by Indus Associated Consultants under ADB loan (TA 2178 Pak-SF) administered by the Project Management and Policy Implementation Unit (PMPIU) of Ministry of Water & Power (Now Ministry of Water Resources). Under this study, Pakistan's Dam Safety Act was developed to give legislative authority to the Council. The study recommended enriching composition of DSC by adding ex-officio members from each of the four Provinces and Chief Engineer (DSO) WAPDA as ex-officio member, besides three members from private sector to work on full time basis. In line with study recommendations, proposal prepared for strengthening DSC enabling it an effective 3rd tier dams monitoring/ regulatory body has been submitted to MoWR and being followed up as well.

1.4. Main Functions

Dams Safety Council mainly deals with the matters pertaining to Dams projects and allied engineering issues at national level. The key function of the Dams Safety Council is to assist the Chief Engineering Advisor & Chairman FFC (CEA&CFFC) in discharge of his duties relating to Dams & Barrages (review of design, repair issues, PC-I/PC-II, Inquiries) and their safety aspects (based on annual & periodic inspections). The other main activities performed by the Council are given as under:

- Participate in the annual and periodic inspection of dams & barrages organized by DSO-WAPDA and Provinces in accordance with SOPs of International Commission on Large Dams (ICOLD).
- Ensure implementation of follow-up actions, relating to O&M, dam safety measures required as a consequence of annual/periodic inspections.

- Advise WAPDA & concerned authorities regarding (i) repairs and maintenance of dams and reservoirs & (ii) regulation of reservoirs as per their SOPs
- Review PC-I, PC-II, Feasibility Studies and other studies/ reports/ plans of new dams & barrages, as and when received from the executing agencies (WAPDA and PIDs etc.)
- Monitor (including periodic field visit) the execution of ongoing dams & barrages projects/ programs funded by the federal government including donors and advise on necessary right coursing/ actions based on the outcome of the monitoring.
- Review plans and specifications for enlargement, modifications, major repairs, revival or otherwise of dams & barrages (as the need arises)
- Share technical data relating to dams in Pakistan including research under PANCOLD including general liaison with all related national and international organizations, in particular with International Commission on Large Dams (ICOLD)
- Liaison with WAPDA, IRSA, FFC, PCIW, NDMA, PDMA, PMD and Provincial Irrigation Departments regarding dams' safety toward: i) water distribution, ii) safety of structures in the event of any disaster iii) contingency plan to meet/respond to any disaster and (iv) observations brought out by the annual and periodic inspections.
- Pakistan is a member of the International Commission on Large Dams (ICOLD) since 1952. The Dams Safety Council acts as the Secretariat of Pakistan National Committee on Large Dams (PANCOLD). PANCOLD shares technical data relating to large dams including general liaison with all concerned national and international organizations in particular with ICOLD.

1.5. Activities performed during 2022

During the year 2022, Dams Safety Council of O/o the CEA & CFFC performed following functions related to its charter of duties given on preceding page as follows;

1.5.1 General Technical Activities

Chief Engineer DSC performed following salient technical/coordination task during year 2022:

- i. Represented office in Standing Committee of Ministry of Water Resources to examine Inquiry Reports conducted in compliance of PAC/DAC directives and recommend disposal/actions by Principal Accounting Officer (PAO) of MoWR (Meetings attended on **17th February 2022, 24th February 2022, 10th March 2022, 15th July 2022** and **25th August 2022**).
- ii. Represented the office during 7th periodic inspection of Mangla Dam Project held from February **8th to February 14th 2022** and also conducted a field visit of Barakas Nullah to assess its discharge carrying capacity as emergency spillway of Mangla Reservoir.
- iii. Represented the office as advisor to Pakistan Commissioner for Indus Water (PCIW) during 117th PIC meeting held from March 01 to **3rd March 2022** in

Islamabad and presented a special case for obtaining advanced flood flow information from Indian side on Eastern Rivers including Chenab River during Monsoon Season of every year.

- iv. Coordinated for record examination/exploration and necessary arrangements regarding Inquiry Committee on PDP-211 AR 2021-22 “Unjustified increase in the quantities of hard rock material **Rs. 2,709.31 million** pertaining to GM Damer Basha Dam Project under chairmanship of CEA/CFFC. Meeting held on **10th June 2022** and final report was submitted to Ministry of Water Resources on **18th July 2022**.
- v. Coordinated for an agreement between Karot Hydropower Authority and Mangla Dam Organization of WAPDA for mutual provision of discharge/level data during monsoon season reached under patronage of worthy CEA/CFFC after series of meetings that was concluded on **7th July 2022** and was successfully implemented in Monsoon 2022.

1.5.2 Technical Review of PC-Is of Dam Projects

Following PC-Is evaluated during year 2022 and technical views/comments were forwarded to Ministry of Water Resources, Provincial Governments & other stakeholder organizations. Detail is given in **Table 2.2**.

Table 2.2: PC-Is reviewed by Dam Safety Council in Year 2022

Sr. No.	Name of Project	Financing	Submission date to MoWR
Khyber Pakhtunkhwa			
1.	Construction of Surkhwai Dam Project District Mardan Costing Rs 2141.825 Million	Federal	25th Feb 2022
2.	Construction of Sher Dara Dam Project District Swabi Estimated Cost Rs 2936.569 Million	Federal	25th Feb 2022
3.	Construction of Sumari Payan Dam District Kohat Estimated Cost Rs. 1968.108 Million	Federal	18th March 2022
4.	Construction of Kora Nullah Dam Project, District D.I Khan Estimated Cost Rs 2887.030 Million	Federal	28th Feb 2022
5.	Construction of Barwasa Dam Project District Haripur Estimated Cost Rs 1,253.273 Million	Federal	18th March 2022
6.	Kurram Tangi Dam Project (Stage-1) 2 nd Revised PC-I, Estimated Cost Rs. 39194.840 Million	Federal	13th Dec 2022
Balochistan			
1.	Construction of Roshanabad Kalat Dam District Kalat Estimated Cost Rs. 350.00 Million	Federal	5th Dec 2022
2.	Construction of Dams at Kamalzai and Tora Shah Area District Pishin	Federal	15th Sep 2022
3.	Construction of Karbala Storage Dam District Pishin Estimated Cost Rs 1126.596 Million	Federal	6th July 2022

Sr. No.	Name of Project	Financing	Submission date to MoWR
4.	Construction of Ghoro Delay Action Dam Lohi Tehsil Dureji District Lasbela	Federal	1 st July 2022
WAPDA			
1	1 st Revised PC-I (updated) Satpara Dam Project (17.4 MW) Estimated Cost Rs 6,371.246 Million	Federal	2 nd Sep 2022

1.5.3 Technical Review of PC-IIs of Dam Projects

PC-II of WAPDA titled "Bhimber Dam Project – PC-II Performa for Feasibility Study, Detailed Engineering Design Preparation of Tender Documents & PC-I" was evaluated and technical views/comments were submitted on **14th February 2022** to concerned quarters.

1.5.4 Activities Performed as PANCOLD Secretariat

- i. Letter was issued to Secretary to PEC Think Tank, Water Resources Development Committee, and Pakistan Engineering Council regarding "Draft Memorandum of Collaboration (MOC) for Strengthening of Pakistan National Committee on Large Dams (PANCOLD)" on **3rd January 2022**.
- ii. PANCOLD members were informed regarding the nominations to participate 90th Annual meeting /7th Congress of ICOLD to be held from **27-30th May to 3rd June 2022** at Marseille France.
- iii. 48th Meeting of Pakistan National Committee on Large Dams (PANCOLD) was organized on **11th March 2022**. Notice of Meeting was issued to all PANCOLD members on **28th February 2022**.
- iv. Minutes of the above meeting were circulated with all PANCOLD members on **16th March 2022**.
- v. Letter was issued on **4th April 2022** to all members of PANCOLD regarding implementation of decision taken in the minutes of the 48th Meeting of Pakistan National Committee on Large Dams (PANCOLD) was held on March 11, 2022.
- vi. Reminder was issued on **14th May 2022** to all members of PANCOLD regarding implementation of decisions taken in the Minutes of 48th Meeting of Pakistan National Committee on Large Dams (PANCOLD) held on **11th March 2022**.
- vii. Reminder was issued on **1st June 2022** to Additional Registrar, Pakistan Engineering Council, and Islamabad regarding "Memorandum of Cooperation (MOC) between PANCOLD and PEC".
- viii. Letter was issued on **4th April 2022** to all members of PANCOLD regarding implementation of decision taken in the minutes of the 48th Meeting of Pakistan National Committee on Large Dams (PANCOLD) was held on **11th March 2022**.
- ix. Letter was issued on **7th April 2022** to Chairman, Pakistan Engineering Council, Islamabad regarding "Memorandum of Cooperation (MOC) between PANCOLD and PEC".
- x. Reminder was issued on **14th May 2022** to all members of PANCOLD regarding implementation of decision taken in the Minutes of the 48th Meeting of Pakistan National Committee on Large Dams (PANCOLD) was held on March 11, 2022.

- xi. Reminder was issued on **1st June 2022** to Additional Registrar, Pakistan Engineering Council, Islamabad regarding “Memorandum of Cooperation (MOC) between PANCOLD and PEC”.
- xii. Notice of Meeting regarding “PANCOLD Sub-Committee for Updation of National Register of Dams” was issued to all PANCOLD members on **21st July 2022**.
- xiii. Meeting of PANCOLD Sub-Committee for Updation of National Register of Dams was held on **13th October 2022** under the Chairmanship of Engineering Advisor (Civil).
- xiv. Minutes of Meeting were issued to all concerned organization regarding “Meeting of PANCOLD Sub-Committee for Updation of National Register of Dams” on **20th October 20, 2022**.