

1988 made several recommendations for improving the status of safety in open cast mines. These recommendations related to framing of (i) a Code of traffic for regulating the movement of heavy earth moving machinery (HEMM), (ii) a Code of practice for prevention of injuries to persons engaged in tipping on stock piles, dumping of overburden at dump yards, at loading points etc., (iii) Codes of practice for dealing with fires, prescribing the design and the maintenance of haul roads as well as drawing up and implementing schemes for proper maintenance, repair, overhaul and erection of heavy earth moving machinery, selection of qualified operators/drivers for heavy earth moving machinery, provision of suitable training centres for drivers and operators and provision of sufficient lighting arrangements etc. The recommendations of the Conference have been sent to all concerned and action for framing the Codes of practice has been initiated.

Dam Collapses in India

1339. SHRIMATI BASAVA RAJESWARI: Will the Minister of WATER RESOURCES be pleased to state:

(a) whether there have been a number of cases of total dam collapses in India;

(b) if so, the details thereof;

(c) the main reasons therefor; and

(d) whether the cases of dam collapse in India are on the high side vis-a-vis other countries?

THE MINISTER OF STATE OF THE MINISTRY OF WATER RESOURCES (SHRI MANUBHAI KOTADIA): (a) to (c). There are sixteen reported cases of total failures of large dams in India. The main reasons of these failures are overtopping, piping and structural. A Statement giving the details of these dams is given below.

(d) No, Sir.

STATEMENT

Total Dam Collapses in India

Sl. No.	State	Name of the Project	Type	Maximum height (m)	Year of completion	Year of failure	Cause of failure
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Andhra Pradesh	Kaddam	Composite	22.5	1957	1958	Overtopping.
2.	Bihar	Kharagpur	Earth	24.00	N.A.	1961	Overtopping.
3.	Gujarat	Machhu-II	Masonry/Earth	24.69	1972	1979	Overtopping.
4.	Gujarat	Mitti	Earth	16.02	1982	1988	Overtopping.
5.	Gujarat	Kaila	Earth	26.0	1954	1959	Piping.
6.	Karnataka	Chikkahole	Masonry	36.81	1969	1972	Structural.
7.	Madhya Pradesh	Pagara	Composite	27.03	1911-27	1943	Overtopping.
8.	Madhya Pradesh	Tigra	Masonry	26.0	1914-17	1917	Overtopping.
9.	Madhya Pradesh	Kedarnala	Earth	21.3	1964	1964	Piping.
10.	Maharashtra	Kadakwasla	Masonry	40.0	1875	1961	Overtopping.
11.	Maharashtra	Kundali	Masonry	45.0	1924	1925	Structural.

Sl. No.	State	Name of the Project	Type	Maximum height (m)	Year of completion	Year of failure	Cause of failure
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
12.	Maharashtra	Panshet	Earth	53.8	1961	1961	Piping.
13.	Uttar Pradesh	Ahaura	Earth	22.4	1954	1955	Piping.
14.	Uttar Pradesh	Nanaksagar	Earth	16.5	1962	1967	Piping.
15.	Uttar Pradesh	Lower Khajauri	Composite	16.0	1949	1949	Piping.
16.	Tamil Nadu	Kodaganar	Earth	17.7	1977	1977	Overtopping.