

Industrial accidents in hydroelectric plant construction work in Japan in 1999-2020

hydroelectric plant construction work industry Code No.030101

Type of accidents in hydroelectric plant construction work in 1999-2020

Type of accidents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
fall from height	13	9	12	10	7	5	5	3	10	5	5	3	8	3	3	7	5	3	2	6	8	4
falling to same level	8	6	4	6	3	2	3	2	2	1	2	2	2	2	0	0	1	7	3	1	1	2
crash	3	2	0	1	1	-	1	0	1	1	3	0	1	2	0	0	0	0	2	3	0	0
struck by flying or falling object	6	5	3	4	3	5	5	3	4	3	1	0	0	3	1	4	2	2	2	0	2	2
collapse	2	2	4	1	2	-	2	0	0	2	2	1	0	1	3	0	1	1	1	1	1	0
crashed by	3	2	3	4	0	2	2	1	2	2	5	3	4	0	1	3	3	0	1	0	2	1
caught in/between	6	4	5	6	4	5	5	6	2	5	6	2	5	2	3	3	5	4	3	5	5	7
cut	1	0	4	3	0	-	2	1	1	2	1	1	0	0	0	1	1	1	0	0	0	2
injury to the sole of the foot	0	1	1	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
drown	0	0	0	-	0	1	0	0	0	0	1	0	1	0	0	1	0	0	0	1	0	0
contact to high/low-temperature	0	0	1	-	0	-	0	0	0	1	1	0	1	1	0	0	0	0	0	1	0	1
contact to harmful substance	0	1	0	-	1	-	0	2	0	0	0	1	0	0	0	0	1	0	0	0	0	1
electric shock	0	0	1	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
explosion	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
burst	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
fire	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
traffic accident (public road)	2	0	1	1	1	-	0	3	2	2	2	4	2	3	0	1	1	1	0	1	1	0
traffic accident (others)	0	0	0	-	0	-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
reaction to motion/improper motion	0	0	1	-	1	2	1	0	1	2	1	0	0	0	1	1	2	0	0	3	0	1
others	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	2

unclassifiable	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23

Causal agents (middle) of industrial accidents in hydroelectric plant construction work in 1999-2020

Causal (M) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
engine	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
power transmission mechanism	0	0	1	-	0	-	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
woodworking machine	1	0	3	1	0	-	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	2
construction machine	8	5	6	3	6	3	4	2	0	3	4	4	2	2	1	5	1	4	2	1	2	1
metal manufacturing machine	0	0	0	1	1	-	1	0	2	0	1	0	0	0	0	0	0	1	0	0	0	0
general machine	0	0	1	1	0	-	1	2	0	1	1	0	1	1	0	0	1	1	0	0	0	1
mobile silviculture machine																	0	0	0	0	0	0
crane	2	3	1	-	0	-	1	1	1	1	1	0	5	0	0	3	3	0	0	1	3	3
conveying machine	3	3	2	3	3	2	2	1	4	3	5	0	4	3	0	1	2	1	2	4	4	2
vehicle	1	1	1	2	1	-	0	3	3	2	2	4	1	2	0	0	1	1	0	1	2	0
pressure vessel	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
chemical facilities	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
welding equipment	0	0	0	-	0	-	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
kiln, caldron	0	0	0	-	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
electric equipment	0	1	1	-	0	-	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
human power machine, tools	1	1	1	-	0	2	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1
tools	5	2	3	4	1	2	0	2	0	2	0	0	3	0	2	2	1	2	4	3	1	1
other equipments, facilities	1	1	0	3	1	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	1
temporary buildings,	14	8	11	9	5	7	7	3	6	3	6	2	4	7	1	5	3	6	3	7	2	3

establishments																						
hazards, harmful substances	0	1	0	-	1	-	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	1
materials	3	5	2	5	2	3	5	2	2	0	2	0	0	1	4	2	4	1	1	2	4	1
load	1	0	0	1	0	-	1	1	1	0	1	0	1	0	1	0	0	1	1	0	0	0
natural environment	4	1	6	3	1	2	3	1	4	6	4	6	2	1	2	1	3	2	1	1	3	2
other causal agent	0	1	0	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
no causal agent	0	0	1	-	1	1	0	0	0	1	1	0	0	0	1	1	1	0	0	2	1	0
unclassifiable	0	0	0	-	0	-	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23

Causal agents (small) of industrial accidents in hydroelectric plant construction work in 1999-2020

Causal (S) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
engine			0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
power transmission mechanism			1		0		0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
circular sawing machine			3		0		0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
band sawing machine			0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
wood planer machine			0		0		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
hollow chisel mortiser, wood borer			0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
chamfering machine, router, woodworking milling machine			0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
chain saw			0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other woodworking machines			0		0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
leveling, transporting or loading machine			1		1		0	2	0	0	0	1	0	0	0	0	0	0	1	0	1	0
excavating machine			2		2		1	0	0	1	3	2	1	0	0	2	0	2	1	0	0	0

equipment																						
arc welding equipment			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
other welding equipment			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kiln, caldron			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
industrial dryer			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other kiln, caldron			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
transmission			0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
electric power facilities			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other electrical equipment			1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
human power cranes			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
human power hauling equipment			1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
human power machine			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
hand tool			0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
ladder			0	1	0	1	0	0	0	0	2	0	2	1	1	0	1	2	1	0	0	0
slinging tool			2	0	0	1	0	1	0	0	1	0	0	0	0	0	2	1	0	0	0	0
other tools			1	0	0	0	0	1	0	0	0	0	0	1	0	2	1	0	0	0	0	1
other equipment, facilities			0	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1
scaffolding			3	1	0	0	2	0	0	0	0	2	0	1	2	1	1	2	0	0	0	1
timbering			0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
stairs, landing stage			2	0	0	0	0	0	0	1	1	1	0	1	0	1	1	1	0	0	0	0
opening			0	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
roof, beam, haze, crossbeam, principal rafter			0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
working platform, boot board			1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
passage			3	0	2	1	2	2	0	0	0	1	0	0	0	2	1	1	0	0	0	1
building, establishment			1	3	2	1	0	0	4	0	2	1	0	1	0	0	0	2	2	0	0	0

19 years old or less	2	0	1	-	1	-	1	1	0	0	1	0	1	0	0	0	0	0	0	1	0	
20-29	7	4	8	8	6	2	3	2	2	5	2	3	3	2	3	0	1	4	0	0	4	7
30-39	3	7	4	7	0	4	4	2	5	11	9	2	4	2	4	3	3	2	4	7	2	1
40-49	8	7	9	5	3	6	5	5	2	2	7	3	5	5	1	6	1	1	5	6	4	4
50-59	13	10	13	13	9	10	8	7	10	3	4	4	6	6	2	4	7	8	1	4	5	6
60 years old or more	11	5	5	4	4	1	5	5	6	5	7	5	6	2	2	8	10	5	4	5	6	5
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23

Workers' number of workplace of industrial accidents in hydroelectric plant construction work in 1999-2020

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
9 workers or less	11	15	10	13	10	11	14	10	7	12	11	8	6	4	6	11	9	7	10	12	10	8
10-29	19	11	19	15	8	6	8	6	12	9	13	8	12	8	4	7	6	5	3	8	11	8
30-49	4	5	6	1	1	2	1	4	5	1	4	1	3	2	2	1	5	6	1	1	1	3
50-99	3	2	3	5	3	3	2	0	1	1	1	0	3	3	0	2	2	1	0	1	0	2
100-299	6	0	2	2	1	1	1	2	0	1	1	0	1	0	0	0	0	1	0	0	0	1
300 workers or more	1	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23

Month of industrial accidents in hydroelectric plant construction work in 1999-2020

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
January	2	3	2	3	2	1	2	3	0	1	6	0	1	3	0	3	2	3	3	3	2	0
February	0	4	3	6	1	2	2	0	2	2	5	0	0	3	1	1	1	2	1	1	2	3
March	12	3	1	3	1	1	4	0	3	3	1	1	4	1	2	2	3	1	0	2	3	2
April	4	0	3	2	5	0	2	1	2	1	3	5	0	0	0	0	1	4	1	2	4	1
May	4	4	5	3	1	3	0	5	2	2	1	2	3	0	3	5	1	1	0	0	1	1
June	4	1	2	4	1	3	3	1	1	2	1	1	0	0	2	0	2	0	0	0	2	1
July	3	3	4	1	0	4	1	1	0	2	1	2	3	3	0	1	3	1	0	1	3	4
August	0	4	2	3	2	1	3	1	2	1	2	0	4	0	1	2	1	1	3	2	2	1
September	5	3	7	5	2	1	0	2	1	3	3	0	2	4	1	1	3	3	1	2	1	1
October	4	2	6	-	4	4	5	3	4	5	1	2	3	2	0	5	1	2	3	2	1	4
November	4	3	1	6	2	2	2	2	3	4	2	1	1	1	2	1	2	2	0	3	1	3
December	2	3	4	1	2	1	2	3	5	0	4	3	4	0	0	0	2	0	2	4	0	2

construction machine	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0
metal manufacturing machine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
general machine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
mobile silviculture machine																	0	0	0	0	0	0
crane	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
conveying machine	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0
vehicle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pressure vessel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
chemical facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
welding equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kiln, caldron	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
electric equipment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
human power machine, tools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
tools	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other equipments, facilities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
temporary buildings, establishments	0	0	0	0	0	2	0	0	0	0	1	0	1	1	1	1	1	0	0	1	0	0
hazards, harmful substances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
materials	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
load	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
natural environment	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
other causal agent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
no causal agent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unclassifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
total	1	1	0	0	1	2	0	1	0	1	1	1	3	1	2	2	2	2	0	2	0	0

stone, sand, substance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other materials	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
load	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
machine/equipment as load	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
natural ground, rock	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
standing tree	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
abnormal environment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
high/cold temperature environment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other environments	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other causal agent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
no causal agent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
unclassifiable	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
total	1	1	0	0	1	2	0	1	0	1	1	1	3	1	2	2	2	2	0	2	0	0

Workers age of fatal accidents in hydroelectric plant construction work in 1999-2020

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
19 years old or less	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
20-29	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
30-39	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
40-49	1	1	0	0	0	0	0	0	0	1	0	1	1	1	0	2	0	0	0	1	0	0
50-59	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	2	0	0	0	0	0
60 years old or more	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
total	1	1	0	0	1	2	0	1	0	1	1	1	3	1	2	2	2	2	0	2	0	0

Workers' number of workplace of fatal accidents in hydroelectric plant construction work in 1999-2020

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
9 workers or less	0	0	0	0	1	1	0	0	0	1	0	1	1	0	1	2	2	0	0	2	0	0

Oita	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Miyazaki	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kagoshima	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Okinawa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
total	1	1	0	0	1	2	0	1	0	1	1	1	3	1	2	2	2	2	0	2	0	0

Data sources: <https://anzeninfo.mhlw.go.jp/user/anzen/tok/anst00.htm> (MHLW, Japan)

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