hydroelectric plant construction work industry Code No.030101

Type of accidents in hydroelectric plant construction work in 1999-2021

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	2021	total	Type of accidents
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	6	142	fall from height
falling to same level	8	6	4	6	3	2	3	2	2	1	2	2	2	2			1	7	3	1	1	2	2	62	falling to same level
crash	3	2		1	1		1		1	1	3		1	2					2	3				21	crash
struck by flying or falling object	6	5	3	4	3	5	5	3	4	3	1			3	1	4	2	2	2		2	2	3	63	struck by flying or falling object
collapse	2	2	4	1	2		2			2	2	1		1	3		1	1	1	1	1			27	collapse
crashed by	3	2	3	4		2	2	1	2	2	5	3	4		1	3	3		1		2	1	2	46	crashed by
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	4	102	caught in/between
cut	1		4	3			2	1	1	2	1	1				1	1	1				2	1	22	cut
injury to the sole of the foot		1	1																					2	injury to the sole of the foot
drown						1					1		1			1				1				5	drown
contact to high/low- temperature			1							1	1		1	1						1		1	1		contact to high/low- temperature

contact to harmful substance		1			1			2				1					1					1		7	contact to harmful substance
electric shock			1																					1	electric shock
explosion																									explosion
burst																									burst
fire																									fire
traffic accident (public road)	2		1	1	1			3	2	2	2	4	2	3		1	1	1		1	1		2	30	traffic accident (public road)
traffic accident (others)													1											1	traffic accident (others)
reaction to motion/improper motion			1		1	2	1		1	2	1				1	1	2			3		1	1	18	reaction to motion/improper motion
others		1		1		1		1										1			2	2	12	21	others
unclassifiable																									unclassifiable
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	578	total

Causal agents (large) of fatal and non-fatal accidents in hydroelectric plant construction work in 1999-2021

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (L)
		2000	2001	2002	2005	2001	2005	2000	2007	2000	2007	2010	2011	2012	2013	2011	2013	2010	2017	2010	2013	2020	2021		agents
machine	9	5	11	6	7	3	6	5	2	5	7	5	3	3	1	5	2	6	2	1	2	4	1	101	machine
crane, conveying																									crane,

machine	6	7	4	5	4	2	3	5	8	6	8	4	10	5		4	6	2	2	6	9	5	8	119	conveying
																									machine
other equipment	7	5	5	7	2	5	1	3	2	5			4		2	3	1	2	4	3		5	5	73	other
other equipment	/	5	5	/	Z	5		5	2	5	1		4		Z	5	1	Z	4	5		5	5		equipment
to way a your buildin as																									temporary
temporary buildings, establishments	14	8	11	9	5	7	7	3	6	3	6	2	4	7	1	5	3	6	3	7	2	3	5	127	buildings,
establistiments																									establishments
substance, material	3	6	2	5	3	3	5	4	_		2			1	4	2	5	1	1	2	4	2		57	substance,
substance, material	5	0	2	5	5	5	5	4	2		2				4	2	5			2	4	Z			material
load	1			1			1	1	1		1		1		1			1	1					10	load
environment	4	1	6	3	1	2	3	1	4	6	4	6	2	1	2	1	3	2	1	1	3	2	2	61	environment
others		1	1	1	1	1				1	1		1		1	1	2			2	1	2	13	30	others
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	578	total

Causal agents (middle) of fatal and non-fatal accidents in hydroelectric plant construction work in 1999-2021

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	2021	total	Causal (M) agents
engine																									engine
power transmission mechanism			1							1														2	power transmission mechanism
woodworking machine	1		3	1				1			1	1										2	1	11	woodworking machine

construction machine	8	5	6	3	6	3	4	2		3	4	4	2	2	1	5	1	4	2	1	2	1		69	construction machine
metal manufacturing machine				1	1		1		2		1							1						7	metal manufacturing machine
general machine			1	1			1	2		1	1		1	1			1	1				1		12	general machine
mobile silviculture machine																									mobile silviculture machine
crane	2	3	1				1	1	1	1	1		5			3	3			1	3	3	1	30	crane
conveying machine	3	3	2	3	3	2	2	1	4	3	5		4	3		1	2	1	2	4	4	2	5	59	conveying machine
vehicle	1	1	1	2	1			3	3	2	2	4	1	2			1	1		1	2		2	30	vehicle
pressure vessel																									pressure vessel
chemical facilities																									chemical facilities
welding equipment											1											2		3	welding equipment
kiln, caldron																									kiln, caldron
electric equipment		1	1							1														3	electric equipment
human power machine, tools	1	1	1			2	1	1	1	1			1									1		11	human power machine, tools

tools	5	2	3	4	1	2		2		2			3		2	2	1	2	4	3	1	1	4	44	tools
other equipments, facilities	1	1		3	1	1			1	1						1						1	1		other equipments, facilities
temporary buildings, establishments	14	8	11	9	5	7	7	3	6	3	6	2	4	7	1	5	3	6	3	7	2	3	5		temporary buildings, establishments
hazards, harmful substances		1			1			2									1					1		6	hazards, harmful substances
materials	3	5	2	5	2	3	5	2	2		2			1	4	2	4	1	1	2	4	1		51	materials
load	1			1			1	1	1		1		1		1			1	1					10	load
natural environment	4	1	6	3	1	2	3	1	4	6	4	6	2	1	2	1	3	2	1	1	3	2	2	61	natural environment
other causal agent		1		1																		2	12	16	other causal agent
no causal agent			1		1	1				1	1				1	1	1			2	1		1	12	no causal agent
unclassifiable													1				1							2	unclassifiable
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	578	total

Causal agents (small) of fatal and non-fatal accidents in hydroelectric plant construction work in 1999-2021

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	2021	total	Causal (S) agents

engine																			engine
power transmission		1				1												2	power transmission
mechanism																			mechanism
circular sawing		3					1	1								2		7	circular sawing
machine																			machine
band sawing																			band sawing
machine																			machine
wood planer					1													1	wood planer
machine					1													I	machine
hollow chisel																			hollow chisel
mortiser, wood																			mortiser, wood
borer																			borer
chamfering																			chamfering
machine, router,																			machine, router,
woodworking																			woodworking
milling machine																			milling machine
chain saw																	1	1	chain saw
other woodworking																			other woodworking
machines																			machines
leveling,																			leveling,
transporting or		1	1		2			1					1		1			7	transporting or
loading machine																			loading machine
excavating machine		2	2	1		1	3	2	1		2	2	1					17	excavating machine
foundation work											_			1				2	foundation work
machine											2							3	machine

I											<u> </u>		L						<u> </u>
hardening machine																			hardening machine
demolition machine				1								1		1				3	demolition machine
vehicle for high lift work																1		1	vehicle for high lift work
other construction machines		3	3	2		2	1	1	1	2	1		1	1			1	19	other construction machines
lathe																			lathe
drill press, milling machine							1											1	drill press, milling machine
grinding machine, buffing machine			1	1	1									1				4	grinding machine, buffing machine
power press																			power press
forging pressure hammer					1													1	forging pressure hammer
shearing machine																			shearing machine
other metal manufacturing machines																			other metal manufacturing machines
centrifugal machine																			centrifugal machine
mixer, grinder																			mixer, grinder
roll machine (except printingroll machine)																			roll machine (except printingroll machine)
injection molding																			injection molding

machine																		machine
food manufacturing machine																		food manufacturing machine
printing machine																		printing machine
industrial robot																		industrial robot
other general power machines		1		1	2		1	1	1	1		1	1		1		11	other general power machines
felling machine																		felling machine
mobile logging machine																		mobile logging machine
skyline yarding machine																		skyline yarding machine
other mobile silviculture machine																		other mobile silviculture machine
crane						1			1			1			1		4	crane
mobile crane		1		1	1		1	1	2		3	2		1	2	1	16	mobile crane
derrick crane																		derrick crane
elevator, lift									1								1	elevator, lift
cargo lifting appliance																		cargo lifting appliance
gondola																		gondola
lumberyard																		lumberyard
equipment, logging																		equipment, logging

cableway												'											cableway
simple skyline yarding equipment																							simple skyline yarding equipment
other powered crane											1								3			4	other powered crane
truck			2		1	1	3	3	3		4	3		1	1	1		1	2	2	3	31	truck
forklift															1							1	forklift
railway equipment							1												1		1	3	railway equipment
conveyor					1												1	1				3	conveyor
loader																							loader
straddle carrier																							straddle carrier
rough terrain hauler		1							1									2	1			5	rough terrain hauler
other powered conveying machines		1	1						1								1				1	5	other powered conveying machines
cars, bus, motorcycle		1	1			3	2	2	2	4	1	2			1	1		1	2		2	25	cars, bus, motorcycle
railway vehicle																							railway vehicle
other vehicles							1															1	other vehicles
boiler																							boiler
pressure vessel																							pressure vessel
other pressure vessels																							other pressure vessels
chemical facilities				i li i i i i i i i i i i i i i i i i i								i lini	<u> </u>	j j		i i i i i i i i i i i i i i i i i i i							chemical facilities

gas welding								1											1	gas welding
equipment								<u> </u>											Ľ	equipment
arc welding																	2		2	arc welding
equipment																				equipment
other welding																				other welding
equipment																				equipment
kiln, caldron																				kiln, caldron
industrial dryer																				industrial dryer
other kiln, caldron																				other kiln, caldron
transmission							1												1	transmission
electric power																				electric power
facilities																				facilities
other electrical		1																	1	other electrical
equipment																				equipment
human power																				human power
cranes																				cranes
human power		1			1	1													3	human power
hauling equipment																				hauling equipment
human power																				human power
machine																				machine
hand tool				1			1		1								1		4	hand tool
ladder			1		1				2	2	1	1		1	2	1		2	14	ladder
slinging tool		2			1		1		1					2	1			1	9	slinging tool
other tools		1					1				1		2	1			1	1	8	other tools

other equipment,																						other equipment,
facilities			1				1												1		6	facilities
scaffolding		3	1			2					2		1	2	1	1	2		1	3	19	scaffolding
timbering				1		2															3	timbering
stairs, landing stage		2							1	1	1		1		1	1	1				9	stairs, landing stage
opening				1							1	1	1								4	opening
roof, beam, haze,																						roof, beam, haze,
crossbeam,														1							1	crossbeam,
principal rafter																						principal rafter
working platform,		1	1						1				1								4	working platform,
boot board																						boot board
passage		3		2	1	2	2				1				2	1	1		1		16	passage
building,		1	3	2	1			4		2	1		1				2	2		2	21	building,
establishment				2				-		2							2	Ľ		Ľ		establishment
other temporary																						other temporary
buildings,		1		1	1		1	2		1	1				2		1		1		12	buildings,
establishments																						establishments
explosive substance																						explosive substance
inflammable																						inflammable
substance																						substance
inflammable gas																						inflammable gas
harmful substance					2									1							3	harmful substance
radiation																						radiation
other hazards,																						other hazards,

harmful substances			1																1		2	harmful substances
metal material		1	1	4	1	2		1				2	1	3	1	1	1	2	1		22	metal material
lumber, bamboo				1				1									1	2			5	lumber, bamboo
stone, sand, substance		1	1		1						1			1							5	stone, sand, substance
other materials												2	1								3	other materials
load					1	1		1		1		1			1	1					7	load
machine/equipment as load				1																	1	machine/equipment as load
natural ground, rock		5	1	1		3	6	1	2		1	2	1	3	1			1	1		29	natural ground, rock
standing tree				1				1	2							1				1	6	standing tree
water										1							1	1			3	water
abnormal environment									1												1	abnormal environment
high/cold temperature environment		1								1										1		high/cold temperature environment
other environments				1	1	1		2	1						1			1	1		9	other environments
other causal agent																			2	12	14	other causal agent
no causal agent		1	1				1	1				1	1	1			2	1		1	11	no causal agent
unclassifiable										1				1							2	unclassifiable
total		40	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	441	total

Workers age of fatal and non-fatal accidents in hydroelectric plant construction work in 1999-2021	

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Age
19 years old or less	2		1		1		1	1			1		1								1		1	10	19 years old or less
20-29	7	4	8	8	6	2	3	2	2	5	2	3	3	2	3		1	4			4	7	5	81	20-29
30-39	3	7	4	7		4	4	2	5	11	9	2	4	2	4	3	3	2	4	7	2	1	5	95	30-39
40-49	8	7	9	5	3	6	5	5	2	2	7	3	5	5	1	6	1	1	5	6	4	4	10	110	40-49
50-59	13	10	13	13	9	10	8	7	10	3	4	4	6	6	2	4	7	8	1	4	5	6	9	162	50-59
60 years old or	11	5	5	4	4	1	5	5	6	5	7	5	6	2	2	8	10	5	4	5	6	5	4	120	60 years old or
more					-																				more
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	578	total

Workers' number of workplace of fatal and non-fatal accidents in hydroelectric plant construction work in 1999-2021

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Workers scale
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	15	230	9 workers or less
10-29	19	11	19	15	8	6	8	6	12	9	13	8	12	8	4	7	6	5	3	8	11	8	8	214	10-29
30-49	4	5	6	1	1	2	1	4	5	1	4	1	3	2	2	1	5	6	1	1	1	3	7	67	30-49
50-99	3	2	3	5	3	3	2		1	1	1		3	3		2	2	1		1		2	2	40	50-99
100-299	6		2	2	1	1	1	2		1	1		1					1				1	2	22	100-299
300 workers or more	1			1						2												1		5	300 workers or more
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	578	total

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Month
January	2	3	2	3	2	1	2	3		1	6		1	3		3	2	3	3	3	2		4	49	January
February		4	3	6	1	2	2		2	2	5			3	1	1	1	2	1	1	2	3	2	44	February
March	12	3	1	3	1	1	4		3	3	1	1	4	1	2	2	3	1		2	3	2	1	54	March
April	4		3	2	5		2	1	2	1	3	5					1	4	1	2	4	1	1	42	April
May	4	4	5	3	1	3		5	2	2	1	2	3		3	5	1	1			1	1		47	May
June	4	1	2	4	1	3	3	1	1	2	1	1			2		2				2	1	3	34	June
July	3	3	4	1		4	1	1		2	1	2	3	3		1	3	1		1	3	4	1	42	July
August		4	2	3	2	1	3	1	2	1	2		4		1	2	1	1	3	2	2	1	13	51	August
September	5	3	7	5	2	1		2	1	3	3		2	4	1	1	3	3	1	2	1	1	5	56	September
October	4	2	6		4	4	5	3	4	5	1	2	3	2		5	1	2	3	2	1	4	1	64	October
November	4	3	1	6	2	2	2	2	3	4	2	1	1	1	2	1	2	2		3	1	3	2	50	November
December	2	3	4	1	2	1	2	3	5		4	3	4				2		2	4		2	1	45	December
total	44	33	40	37	23	23	26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	578	total

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Month of fatal and non-fatal accidents in hydroelectric plant construction work in 1999-2021

Prefecture of fatal and non-fatal accidents in hydroelectric plant construction work in 1999-2021

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Prefecture
Hokkaido	9	2	5		1		4		1	5	2	1	3	3	2	1	1	4	1	2		1	2	50	Hokkaido
Aomori	2							1	1		1	1		1	1		1		1			2		12	Aomori

lwate	1	1	1			2		3	1			1				2		1				13	lwate
Miyagi	1				1	1			2	4								2		2	1	14	Miyagi
Akita				2	1	4												2	1	1	11	22	Akita
Yamagata			1	4	1	3	1	1											2		2	15	Yamagata
Fukushima	2	1	3				4	1	1		1	1	1	1	1			1	1		1	20	Fukushima
Ibaraki		1		1	1				2										2			7	Ibaraki
Tochigi							1		1	1												3	Tochigi
Gunma	1	3	1			1										1	1		1	1		10	Gunma
Saitama		2	2		3		1														2	10	Saitama
Chiba	1			2					1			3			1			2		2		12	Chiba
Tokyo	3				1				2	2	1	2	1	2	1		1	1	1			18	Tokyo
Kanagawa			2				3								1					2		8	Kanagawa
Niigata	2			1	3	1	2		1		2		2	1		2	1	1	1		4	24	Niigata
Toyama	3		4					1			1	1		2	2					2		16	Toyama
lshikawa																					1	1	Ishikawa
Fukui												1						1	1			3	Fukui
Yamanashi		1			1				1						1							4	Yamanashi
Nagano	2			1	2						1				1		1	1		1		10	Nagano
Gifu		1	3		2	2	3	1	2		2				1	2					2	21	Gifu
Shizuoka	2	6	2	2	2	2		1	1					2					4			24	Shizuoka
Aichi		2					1	1	1			1	1	2		1	2	1	1		1	15	Aichi
Mie								1			1		2	3		1						8	Mie
Shiga			1	1			2															4	Shiga

			i				i —	í <u> </u>	i —					1	1	1			1	1		1	1
Kyoto	1							2		1				2				1				7	Kyoto
Osaka						2	1			2	1				2				1			9	Osaka
Нуодо	1	1	2											1			1				1	7	Hyogo
Nara				2					1	1						1		1			2	8	Nara
Wakayama		1		1										1								3	Wakayama
Tottori	1		1							1	1											4	Tottori
Shimane									1									1			1	3	Shimane
Okayama		3	2	1					2									1				9	Okayama
Hiroshima	1		1				1	2							1		2	1				9	Hiroshima
Yamaguchi		1	1	1			1				1								1	1		7	Yamaguchi
Tokushima								1	2							2			1			6	Tokushima
Kagawa	2	1	1								1						1			1		7	Kagawa
Ehime	1									1			1						1			4	Ehime
Kochi					2		2	1	2					1								8	Kochi
Fukuoka	3		1					1	1		3	2		1	1	3						16	Fukuoka
Saga		1			1	1			1	1												5	Saga
Nagasaki						1									1							2	Nagasaki
Kumamoto	1		2			1		1		1	1	1			2	1	1	1		1		14	Kumamoto
Oita	2	1		1				3	1						1		1	1	2	5	2	20	Oita
Miyazaki	1	3	3	2							2											11	Miyazaki
Kagoshima	1		1								3		1	1	3				1	1	1	13	Kagoshima
Okinawa		1			1																	2	Okinawa

total	44	33	40		23		26	22	25	26	30	17	25	17	12	21	22	20	14	22	22	23	34	518	total	
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Fatal and non-fatal accidents mean fatal and non-fatal injuries and occupational diseases with work absence of 4 days and more. Data of 2011 year include fatal and non-fatal accidents caused by Great East Japan Earthquake in 2011.

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

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Fatal accidents in hydroelectric plant construction work in Japan in 1999-2021

hydroelectric plant construction work industry Code No.030101

Type of fatal accidents in hydroelectric plant construction work in 1999-2021

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	2021	total	Type of accidents
fall from height	1					2		1				1	1	1	1		2	1		1				12	fall from height
falling to same level																									falling to same
																									level
crash																									crash
struck by flying or		1			1								1											3	struck by flying
falling object																									or falling object
collapse										1					1									2	collapse
crashed by													1											1	crashed by
																									caught

caught in/between									1	1			2	in/between
cut														cut
injury to the sole of the foot														injury to the sole of the foot
drown						1			1		1		3	drown
contact to high/low- temperature														contact to high/low- temperature
contact to harmful substance														contact to harmful substance
electric shock														electric shock
explosion														explosion
burst														burst
fire														fire
traffic accident (public road)														traffic accident (public road)
traffic accident (others)														traffic accident (others)
reaction to motion/improper motion														reaction to motion/improper motion
others														others
unclassifiable														unclassifiable

total	1	1		1	2	1	1	1	1	3	1	2	2	2	2	2		23	total

Causal agents (large) of fatal accidents in hydroelectric plant construction work in 1999-2021

Causal (L) agents	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (L) agents
machine													1			1		1						3	machine
crane, conveying machine	1							1				1	1				1	1						6	crane, conveying machine
other equipment																									other equipment
temporary buildings, establishments						2					1		1	1	1	1	1			1				9	temporary buildings, establishments
substance, material															1									1	substance, material
load																									load
environment		1			1					1										1				4	environment
others																									others
total	1	1			1	2		1		1	1	1	3	1	2	2	2	2		2				23	total

Causal agents (middle) of fatal accidents in hydroelectric plant construction work in 1999-2021

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	2021	total	Causal (M) agents
engine																									engine
power transmission mechanism																									power transmission mechanism
woodworking machine																									woodworking machine
construction machine													1					1						2	construction machine
metal manufacturing machine																									metal manufacturing machine
general machine																1								1	general machine
mobile silviculture machine																									mobile silviculture machine
crane													1											1	crane
conveying machine	1							1				1					1	1						5	conveying machine
vehicle																									vehicle
pressure vessel																									pressure vessel
chemical facilities																									chemical

																facilities
																welding equipment
																kiln, caldron
																electric equipment
																human power machine, tools
																tools
																other equipments, facilities
			2			1	1	1	1	1	1		1			temporary buildings, establishments
																hazards, harmful substances
									1						1	materials
																load
1		1			1								1		4	natural environment
																other causal agent
										Image:	- -					

no causal agent																			no causal
no causal agent																			agent
unclassifiable																			unclassifiable
total	1	1		1	2	1	1	1	1	3	1	2	2	2	2	2		23	total

Causal agents (small) of fatal accidents in hydroelectric plant construction work in 1999-2021

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Causal (S) agents
																								engine
																								power transmission mechanism
																								circular sawing machine
																								band sawing machine
																								wood planer machine
																								hollow chisel mortiser, wood borer
																								chamfering machine, router, woodworking milling machine
		1999 2000	1999 2000 2001 Image: state sta	1999200020012002Image: state	1999 2000 2001 2002 2003 Image: state	1999 2000 2001 2002 2003 2004 Image: state sta	1999200020012002200320042005Image: Selection of the se	19992000200120022003200420052006Image: strain	1999 2000 2001 2002 2004 2005 2006 2007 Image: Constraint of the second straint of the second	1999 2000 2001 2002 2004 2005 2006 2007 2008 Image: Constraint of the straint of the strain	1999 2000 2001 2002 2004 2005 2006 2007 2008 2009 Image: Constraint of the straint of the s	1999 2000 2001 2002 2004 2005 2006 2007 2008 2009 2010 Image: Constraint of the straint of	1999 2000 2001 2002 2004 2005 2007 2008 2009 2010 2011 Image: Second Secon	1999 2000 2001 2003 2004 2006 2007 2008 2009 2010 2011 2012 Image: Constraint of the straint of the strain	1999 2000 2001 2002 2003 2004 2005 2007 2008 2009 2010 2011 2012 2013 Image: I	1999 2000 2001 2002 2003 2004 2006 2008 2009 2010 2011 2012 2013 2014 Image: I	1999 2000 2001 2002 2003 2004 2006 2008 2009 2010 2011 2013 2014 2015 Image: Construction of the structure of the struct	1999 2000 2001 2003 2004 2005 2006 2007 2008 2010 2011 2012 2013 2014 2015 2016 Image: Ima	1999 2000 2001 2003 2004 2005 2007 2008 2009 2011 2012 2013 2014 2015 2016 2017 1	1999 2000 2001 2002 2004 2005 2006 2007 2008 2010 2011 2012 2013 2014 2015 2016 2017 2018 1 <td>1999 2000 2001 2002 2003 2004 2005 2007 2008 2009 201 2013 2014 2015 2016 2017 2018 2019 1<td>1999 2001 2002 2003 2004 2005 2007 2008 2009 201 201 201 2014 2015 2016 2017 2018 2019 2020 1<td>1999 2000 2001 2002 2003 2004 2005 2006 2009 2010 2011 2013 2014 2015 2016 2017 2018 2019 2020 2021 1 <t< td=""><td></td></t<></td></td></td>	1999 2000 2001 2002 2003 2004 2005 2007 2008 2009 201 2013 2014 2015 2016 2017 2018 2019 1 <td>1999 2001 2002 2003 2004 2005 2007 2008 2009 201 201 201 2014 2015 2016 2017 2018 2019 2020 1<td>1999 2000 2001 2002 2003 2004 2005 2006 2009 2010 2011 2013 2014 2015 2016 2017 2018 2019 2020 2021 1 <t< td=""><td></td></t<></td></td>	1999 2001 2002 2003 2004 2005 2007 2008 2009 201 201 201 2014 2015 2016 2017 2018 2019 2020 1 <td>1999 2000 2001 2002 2003 2004 2005 2006 2009 2010 2011 2013 2014 2015 2016 2017 2018 2019 2020 2021 1 <t< td=""><td></td></t<></td>	1999 2000 2001 2002 2003 2004 2005 2006 2009 2010 2011 2013 2014 2015 2016 2017 2018 2019 2020 2021 1 <t< td=""><td></td></t<>	

chain saw														chain saw
other woodworking machines														other woodworking machines
leveling, transporting or loading machine							1						1	leveling, transporting or loading machine
excavating machine														excavating machine
foundation work machine														foundation work machine
hardening machine														hardening machine
demolition machine														demolition machine
vehicle for high lift work														vehicle for high lift work
other construction machines										1			 1	other construction machines
lathe														lathe
drill press, milling machine														drill press, milling machine
grinding machine, buffing machine														grinding machine, buffing machine
power press														power press
forging pressure hammer														forging pressure hammer
shearing machine														shearing machine

hachines I <th>other metal</th> <th></th> <th>other metal</th>	other metal													other metal
entrifugal machine I	manufacturing													manufacturing
ixer, grinder i <td< td=""><td>machines</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>machines</td></td<>	machines													machines
and thine (except rinting oll machine) and in a i	centrifugal machine													centrifugal machine
rintingroll I	mixer, grinder													mixer, grinder
nachine) I <td>roll machine (except</td> <td></td> <td>roll machine (except</td>	roll machine (except													roll machine (except
injection molding injection molding industrial robot industrial robot <t< td=""><td>printingroll</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>printingroll</td></t<>	printingroll													printingroll
Aachine I <td>machine)</td> <td></td> <td>machine)</td>	machine)													machine)
ood manufacturing nachine Image: Constraint of the constraint of	injection molding													injection molding
nachine I <td>machine</td> <td></td> <td>machine</td>	machine													machine
industrial robot i	food manufacturing													food manufacturing
Adustrial robot Image: Adustrial robot hdustrial robot </td <td>machine</td> <td></td> <td>machine</td>	machine													machine
in a condition	printing machine													printing machine
ower machines Image: stability of the	industrial robot													industrial robot
ower machines Image: Solution of the structure of the	other general								1				1	other general
nobile logging nachine	power machines													power machines
nachine kyline yarding hachine la	felling machine													felling machine
kyline yarding Imachine	mobile logging													mobile logging
nachine machine machine	machine													machine
	skyline yarding													skyline yarding
ther mobile other mobile	machine													machine
	other mobile													other mobile
Iviculture machine	silviculture machine													silviculture machine
rane	crane													crane

mobile crane								1						1	mobile crane
derrick crane															derrick crane
elevator, lift															elevator, lift
cargo lifting															cargo lifting
appliance															appliance
gondola															gondola
lumberyard															lumberyard
equipment, logging															equipment, logging
cableway															cableway
simple skyline															simple skyline
yarding equipment															yarding equipment
other powered															other powered
crane															crane
truck	1				1		1			1	1			5	truck
forklift															forklift
railway equipment															railway equipment
conveyor															conveyor
loader															loader
straddle carrier															straddle carrier
rough terrain hauler															rough terrain hauler
other powered															other powered
conveying machines															conveying machines
cars, bus,															cars, bus,
motorcycle															motorcycle

	 	 	 	 	 	=	=	 =	 	 	——	 	=		i
railway vehicle														railway vehicle	
other vehicles														other vehicles	
boiler														boiler	
pressure vessel														pressure vessel	
other pressure														other pressure	
vessels														vessels	
chemical facilities														chemical facilities	;
gas welding														gas welding	
equipment														equipment	
arc welding														arc welding	
equipment														equipment	
other welding														other welding	
equipment														equipment	
kiln, caldron														kiln, caldron	
industrial dryer														industrial dryer	
other kiln, caldron														other kiln, caldroi	n
transmission														transmission	
electric power														electric power	
facilities														facilities	
other electrical														other electrical	
equipment														equipment	
human power														human power	
cranes														cranes	

human power																human power
hauling equipment																hauling equipment
human power																human power
machine																machine
hand tool																hand tool
ladder																ladder
slinging tool																slinging tool
other tools																other tools
other equipment,																other equipment,
facilities																facilities
scaffolding			1								1		1		3	scaffolding
timbering																timbering
stairs, landing stage																stairs, landing stage
opening								1	1						2	opening
roof, beam, haze,																roof, beam, haze,
crossbeam,																crossbeam,
principal rafter																principal rafter
working platform,																working platform,
boot board																boot board
passage																passage
building,																building,
establishment			1			1				1					3	establishment
other temporary																other temporary
buildings,																buildings,

establishments															establishments
explosive substance															explosive substance
inflammable															inflammable
substance															substance
inflammable gas															inflammable gas
harmful substance															harmful substance
radiation															radiation
other hazards,															other hazards,
harmful substances															harmful substances
metal material									1					1	metal material
lumber, bamboo															lumber, bamboo
stone, sand,															stone, sand,
substance															substance
other materials															other materials
load															load
machine/equipment															machine/equipment
as load															as load
natural ground,	1		1			1								3	natural ground,
rock			<u> </u>												rock
standing tree															standing tree
water												1		1	water
abnormal															abnormal
environment															environment
high/cold															high/cold

temperature																			temperature
environment																			environment
other environments																			other environments
other causal agent																			other causal agent
no causal agent																			no causal agent
unclassifiable																			unclassifiable
total	1	1		1	2	1	1	1	1	3	1	2	2	2	2	2		23	total

Workers age of fatal accidents in hydroelectric plant construction work in 1999-2021

Age	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Age
19 years old or less													1											1	19 years old or less
20-29						1									1									2	20-29
30-39																		1		1				2	30-39
40-49	1	1								1		1	1	1		2				1				9	40-49
50-59						1		1					1		1		2							6	50-59
60 years old or					1						1							1						3	60 years old or
more																								 -	more
total	1	1			1	2		1		1	1	1	3	1	2	2	2	2		2				23	total

Workers' number of workplace of fatal accidents in hydroelectric plant construction work in 1999-2021

Workers scale	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Workers scale

9 workers or less				1	1		1		1	1		1	2	2		2		12	9 workers or less
10-29	1				1	1		1				1						5	10-29
30-49		1									1				2			4	30-49
50-99										1								1	50-99
100-299										1								1	100-299
300 workers or																			300 workers or
more																			more
total	1	1		1	2	1	1	1	1	3	1	2	2	2	2	2		23	total

Month of fatal accidents in hydroelectric plant construction work in 1999-2021

Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Month
January		1														1								2	January
February											1						1			1				3	February
March													1			1								2	March
April													1							1				2	April
May						1																		1	Мау
June								1		1														2	June
July	1																							1	July
August												1			1									2	August
September																		1						1	September
October														1			1	1						3	October
November						1									1									2	November
																								2	

December				1						1								2	December
total	1	1		1	2	1	1	1	1	3	1	2	2	2	2	2		23	total

Prefecture of fatal accidents in hydroelectric plant construction work in 1999-2021

Prefecture	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	total	Prefecture
Hokkaido														1		1								2	Hokkaido
Aomori																									Aomori
lwate										1														1	lwate
Miyagi											1													1	Miyagi
Akita																									Akita
Yamagata																									Yamagata
Fukushima	1																							1	Fukushima
Ibaraki																									Ibaraki
Tochigi																									Tochigi
Gunma																									Gunma
Saitama		1																						1	Saitama
Chiba																									Chiba
Tokyo																									Tokyo
Kanagawa																									Kanagawa
Niigata															2			1						3	Niigata
Toyama													1			1	1							3	Toyama
Ishikawa																									Ishikawa

Fukui															Fukui
Yamanashi															Yamanashi
Nagano															Nagano
Gifu								1			1			2	Gifu
Shizuoka					1					1				2	Shizuoka
Aichi															Aichi
Mie															Mie
Shiga															Shiga
Kyoto															Kyoto
Osaka															Osaka
Нуодо															Нуодо
Nara			1									1		2	Nara
Wakayama															Wakayama
Tottori															Tottori
Shimane															Shimane
Okayama				1										1	Okayama
Hiroshima								1				1		2	Hiroshima
Yamaguchi															Yamaguchi
Tokushima															Tokushima
Kagawa															Kagawa
Ehime															Ehime
Kochi															Kochi
Fukuoka															Fukuoka

Saga																			Saga
Nagasaki																			Nagasaki
Kumamoto									1									1	Kumamoto
Oita																			Oita
Miyazaki					1													1	Miyazaki
Kagoshima																			Kagoshima
Okinawa																			Okinawa
total	1	1		1	2	1	1	1	1	3	1	2	2	2	2	2		23	total

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

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